



Transpac - Weather Safety



Joe Sienkiewicz — joseph.sienkiewicz@noaa.gov

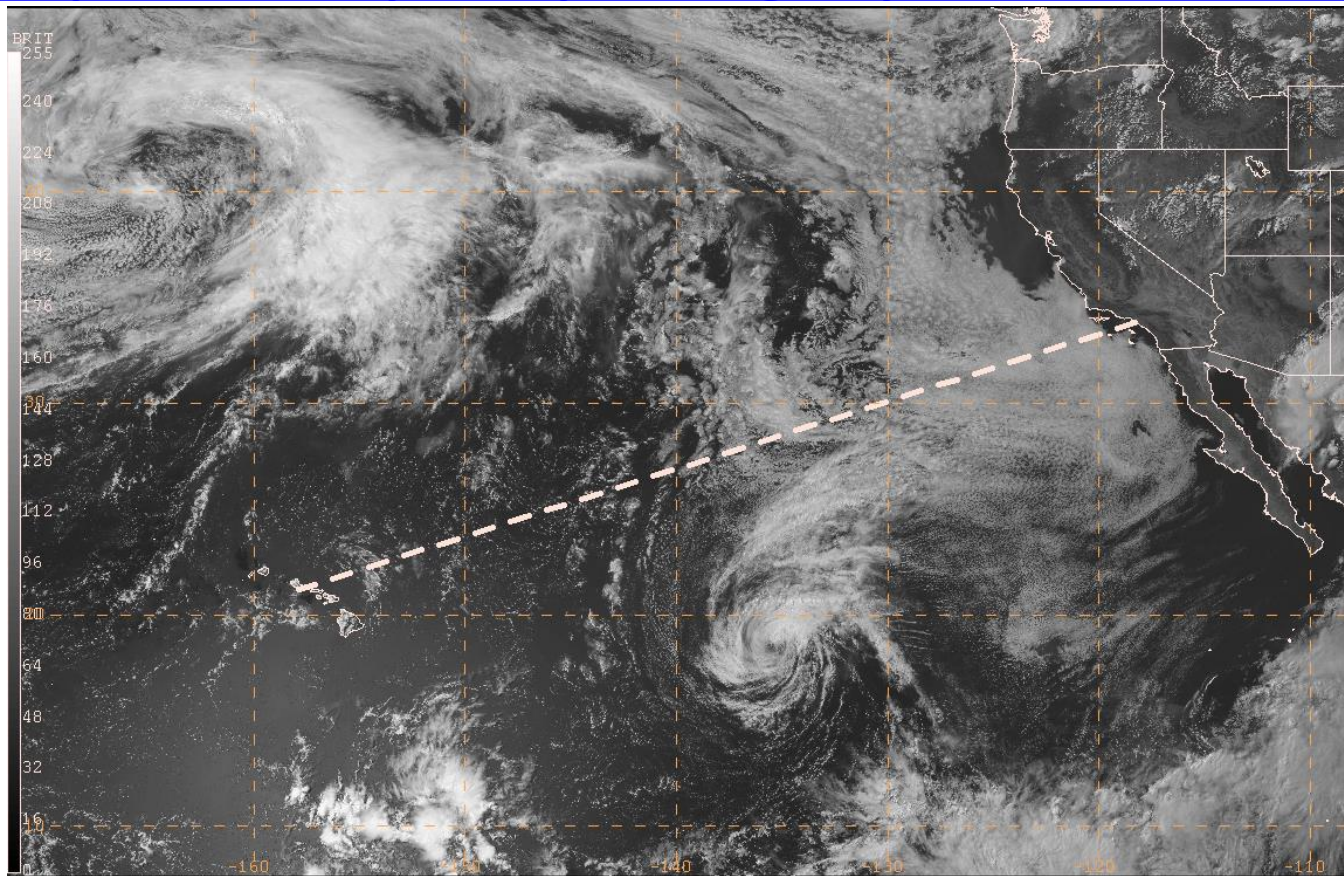
NOAA/NWS Ocean Prediction Center

<https://ocean.weather.gov>

With Jon Gottschalck

NOAA/NWS Climate Prediction Center

<https://www.cpc.ncep.noaa.gov/products/GODAS/>



WCF Transpac 2015.vmt
190706/0000 GOES17 CH02 VIS_0.64

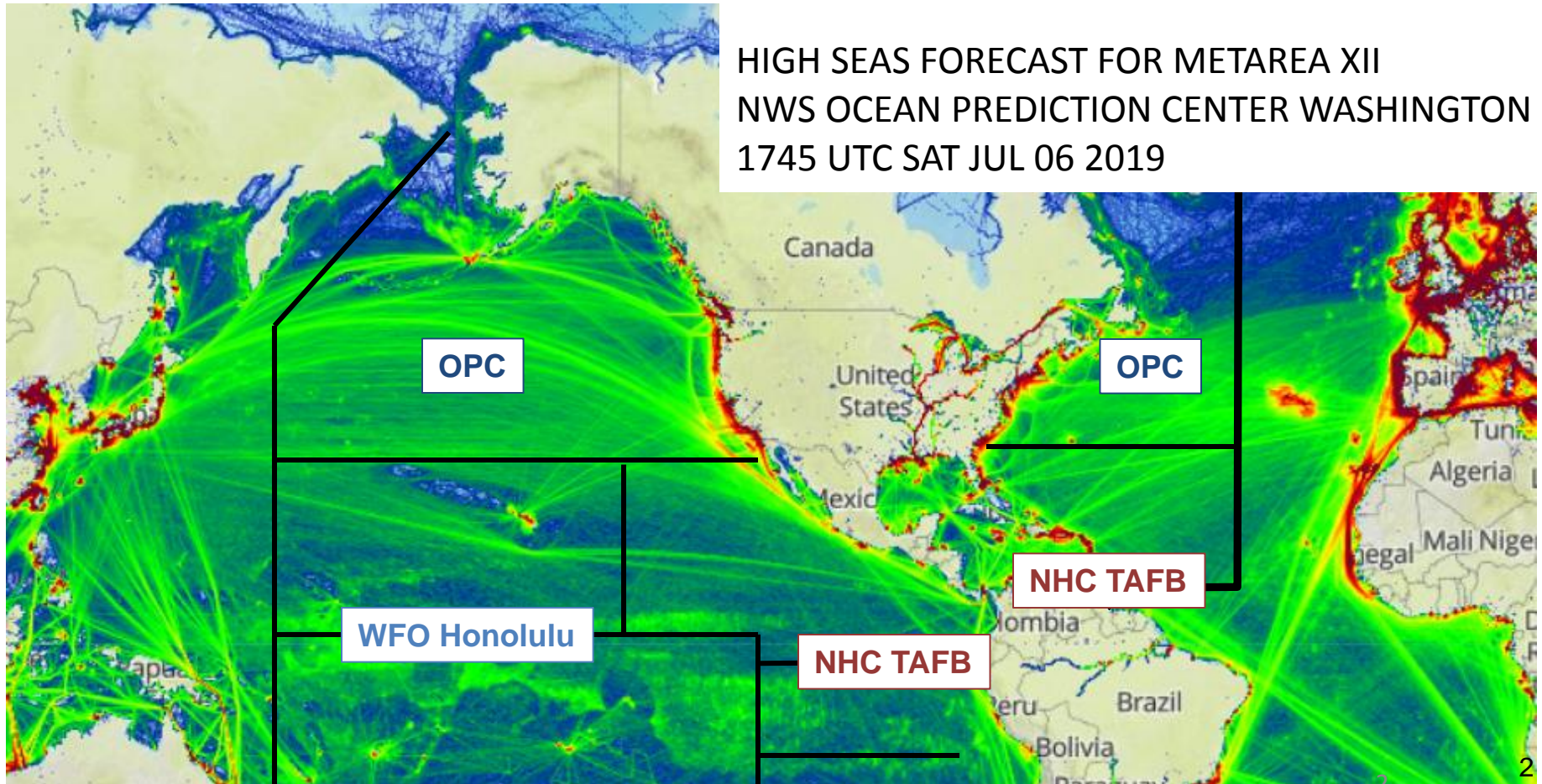
2016 Global Ship Tracks

(NWS High Seas Marine Zones)

FZPN02 KWBC 061725
HSFEPI

Shipping lanes in green:

HIGH SEAS FORECAST FOR METAREA XII
NWS OCEAN PREDICTION CENTER WASHINGTON DC
1745 UTC SAT JUL 06 2019



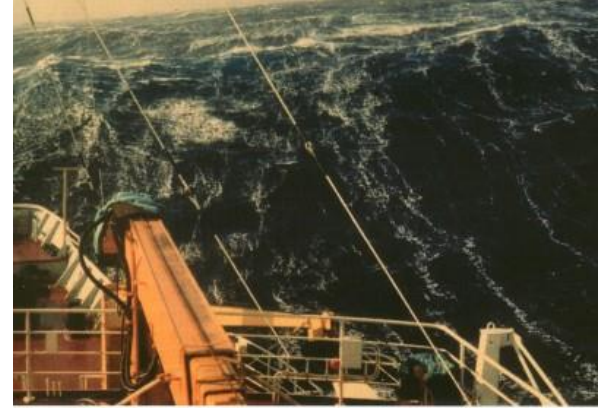
WARNINGS (non-TROPICAL)



BEAUFORT FORCE 8
WIND SPEED: 34-40 KNOTS

SEA: WAVE HEIGHT 5.5-7.5M (18-25FT), MODERATELY HIGH WAVES OF GREATER LENGTH, EDGES OF CREST BEGIN TO BREAK INTO THE SPINDRIFT, FOAM BLOWN IN WELL MARKED STREAKS ALONG WIND DIRECTION.

**GALE
WARNING**
Force 8,9



BEAUFORT FORCE 9
WIND SPEED: 41-47 KNOTS

SEA: WAVE HEIGHT 7-10M (23-32FT), HIGH WAVES, DENSE STREAKS OF FOAM ALONG DIRECTION OF THE WIND, WAVE CRESTS BEGIN TO TOPPLE, TUMBLE, AND ROLL OVER. SPRAY MAY AFFECT VISIBILITY.



BEAUFORT FORCE 10
WIND SPEED: 48-55 KNOTS

SEA: WAVE HEIGHT 9-12.5M (29-41FT), VERY HIGH WAVES WITH LONG OVERHANGING CRESTS, THE RESULTING FOAM, IN GREAT PATCHES, IS BLOWN IN DENSE WHITE STREAKS ALONG WIND DIRECTION. ON THE WHOLE, SEA SURFACE TAKES A WHITE APPEARANCE, TUMBLING OF THE SEA IS HEAVY AND SHOCK-LIKE, VISIBILITY AFFECTED.

**STORM
WARNING**
Force 10,11

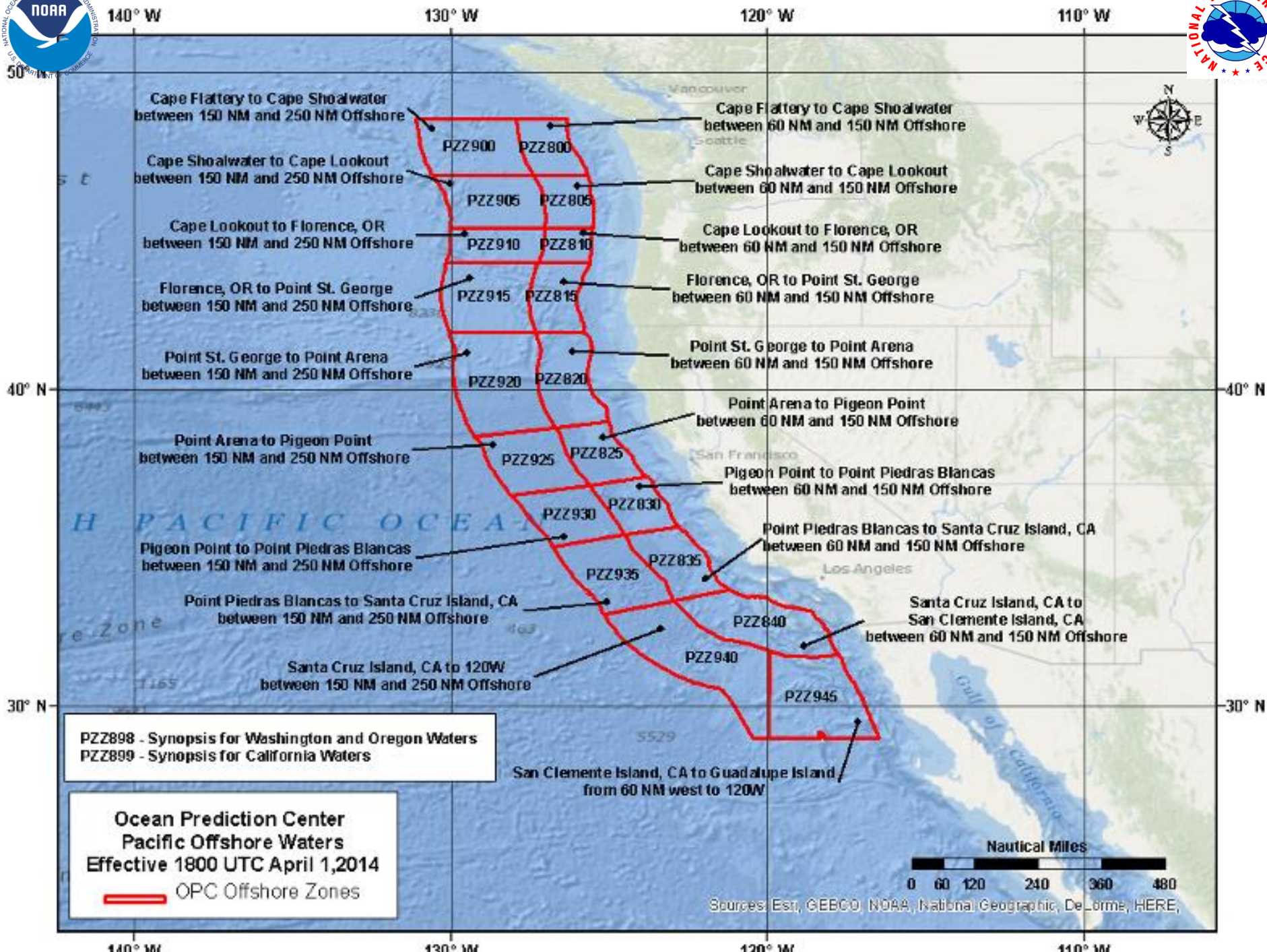
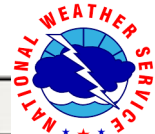
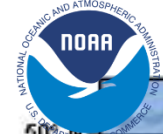


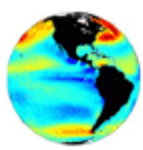
BEAUFORT FORCE 12
WIND SPEED: 64 KNOTS

SEA: SEA COMPLETELY WHITE WITH DRIVING SPRAY, VISIBILITY VERY SERIOUSLY AFFECTED. THE AIR IS FILLED WITH FOAM AND SPRAY

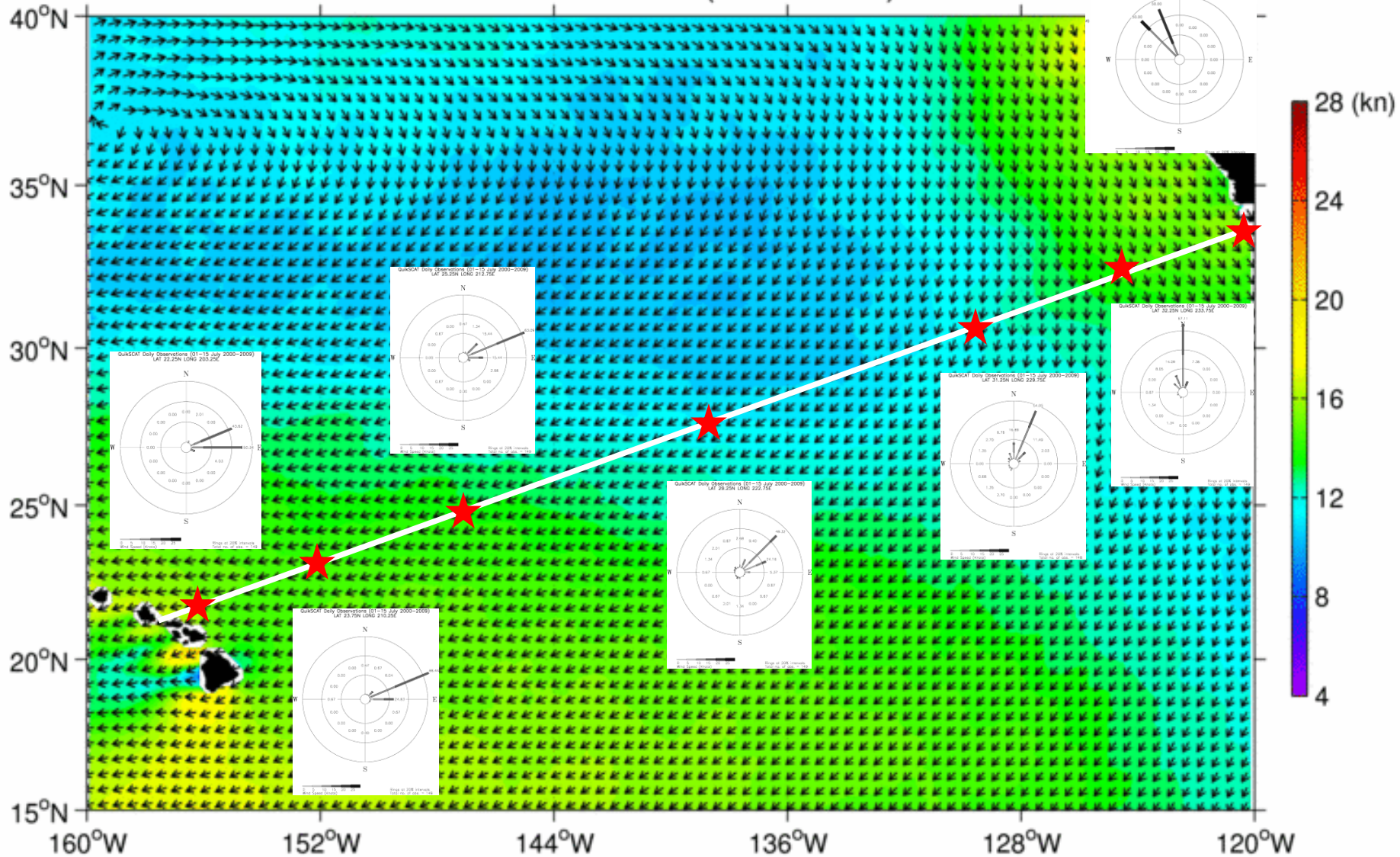
**HURRICANE
FORCE
WARNING**
Force 12







01-15 July
QuikSCAT .5x.5° (2000-2009)



Take Home Messages

- Short term climate factors such as ENSO and MJO can modulate day to day weather conditions on seasonal (over 2-3 months) and subseasonal (over 1-3 weeks)
 - ✓ ENSO status: El Nino conditions rapidly weakening (**Slide 2**)
 - ✓ MJO status: Active and impacting current conditions in the CPAC and EPAC (**Slide 3**)
- Mid-latitude – subtropical interactions favored to play substantial role during the start and early days of the event (**Slides 4-6**)
- Tropical cyclone activity ongoing and likely to continue in the EPAC (**Slide 7**)
- **Overview**: The MJO and interactions with mid-latitude weather features favor weaker than normal Trade winds at the start and potentially the 1st week of event. Thereafter, winds are favored to increase to at least normal magnitudes as eastern Pacific High Pressure is re-established and strengthens. Tropical cyclone activity (i.e., associated remote wind and wave impacts) are a likely threat for much, if not all of the event period.

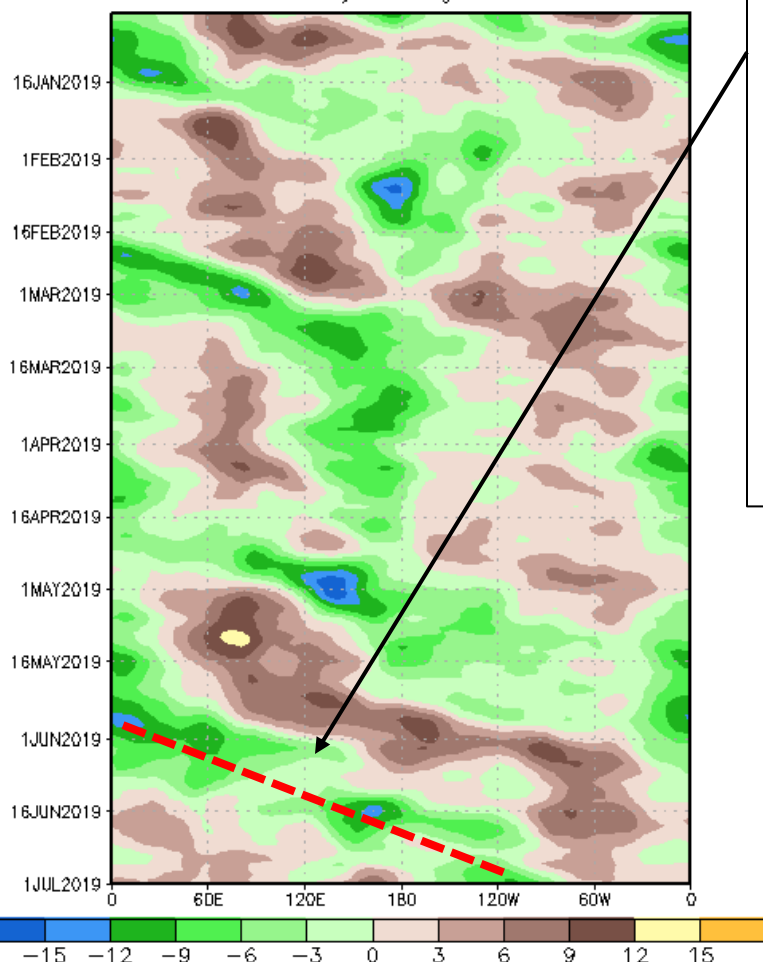
ENSO – El Nino - Southern Oscillation

MJO – Madden Julian Oscillation

MJO Active at Moderate Strength

200-hPa Velocity Potential Anomaly: 5N–5S

5-day Running Mean

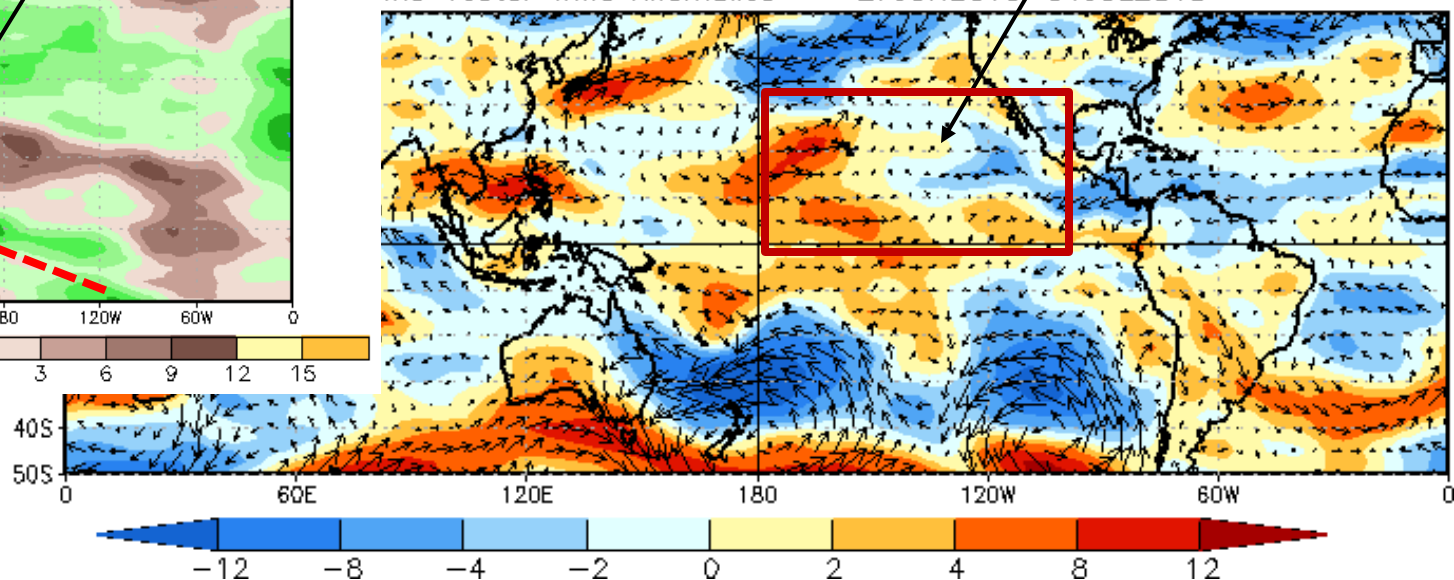


Enhanced phase of MJO (green shading) has been shifting eastward across the Pacific Ocean (red dashed line)

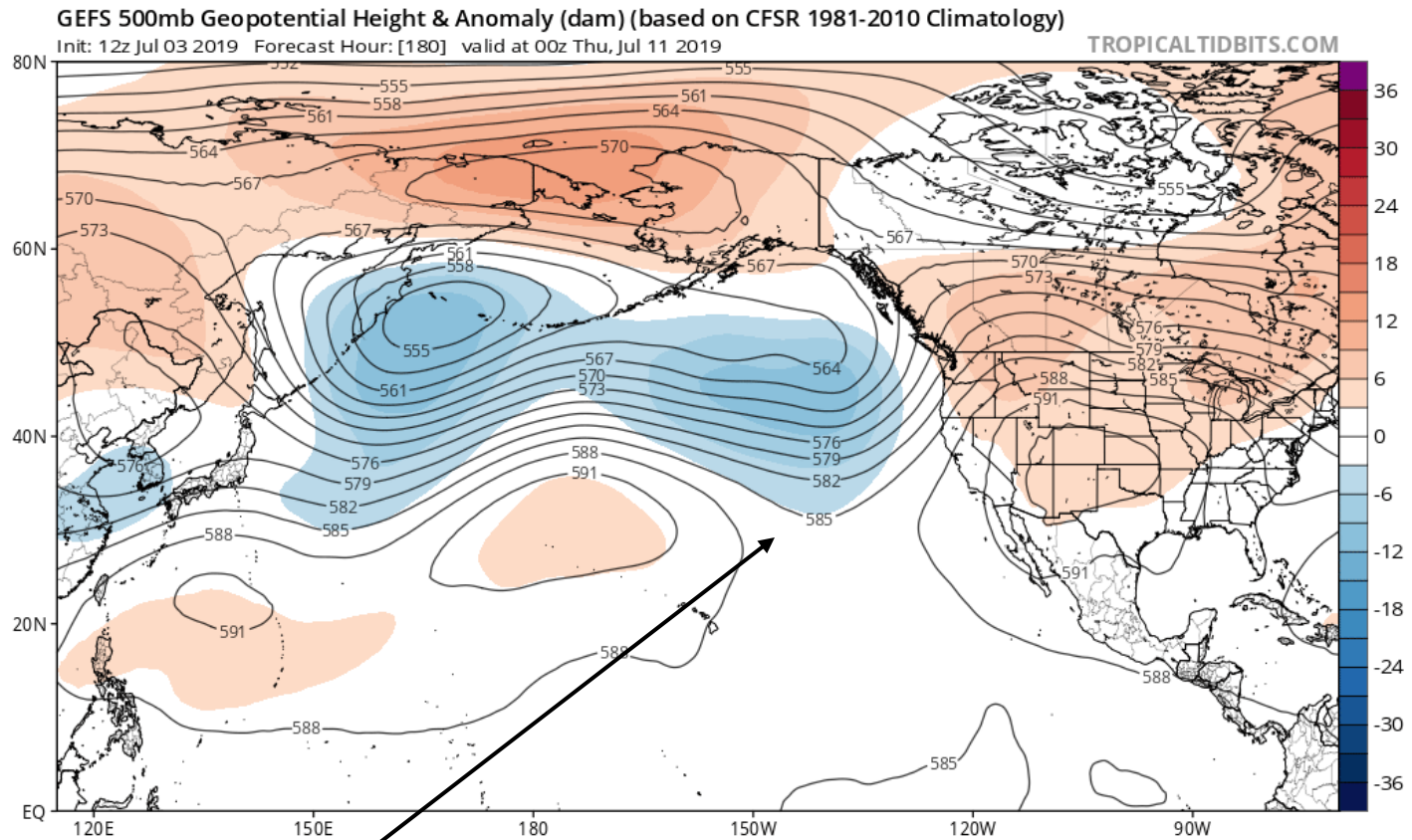
Impacts from this are (1) current and favored first week of event weaker than normal Trade winds and (2) elevated likelihood of tropical cyclone activity first half of event

Low-level winds (below) are weaker than average (warm shades) in some areas of the Tropics and sub-tropics. This is favored to continue and shift eastward with time

mb Vector Wind Anomalies -- 27JUN2019–01JUL2019



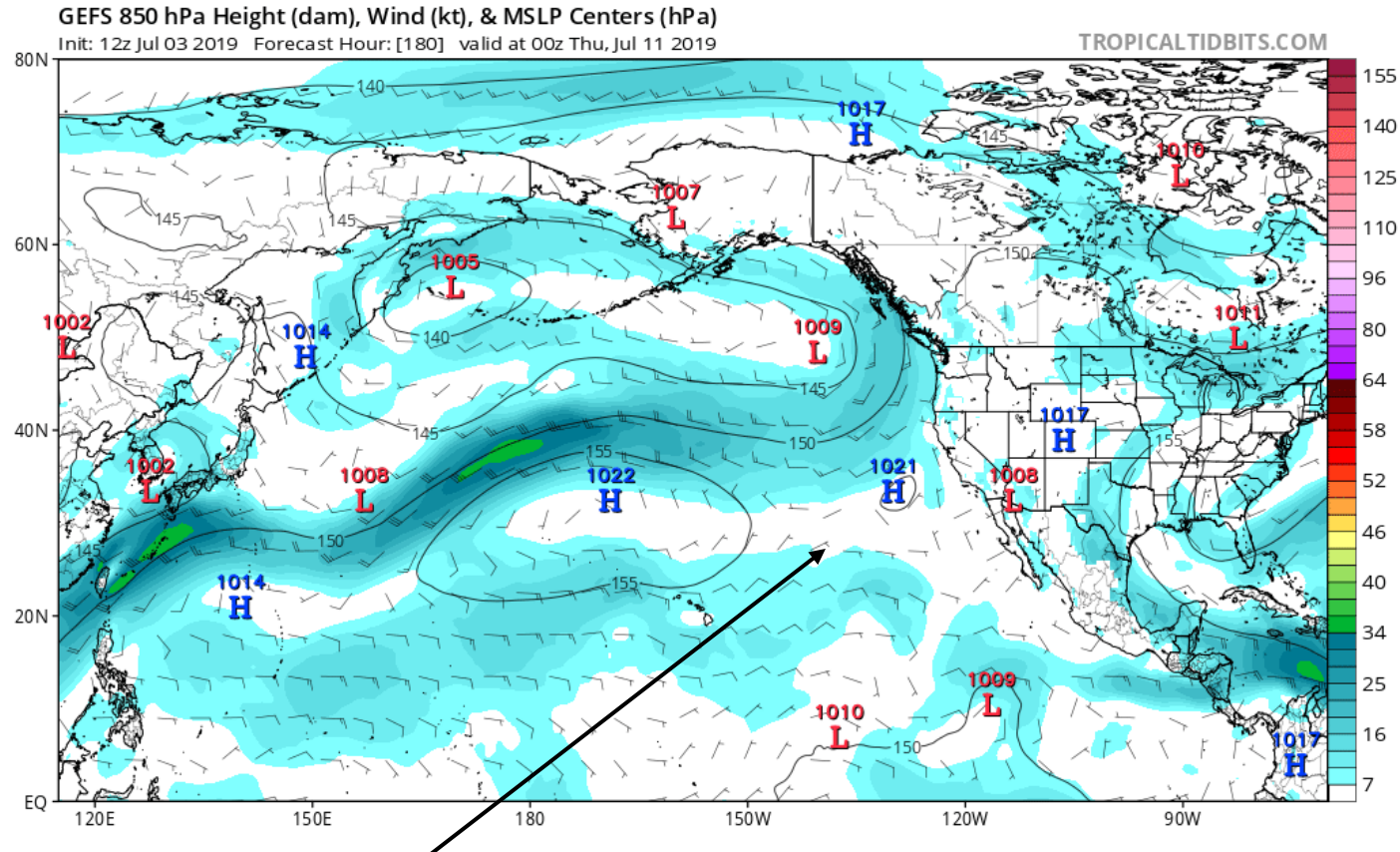
Mid-Latitude Interactions



Rex block favored to slowly break down by 10 July, but remnant pattern favors lower latitude troughing and storminess off the U.S. West Coast with potential frontal activity extending southward

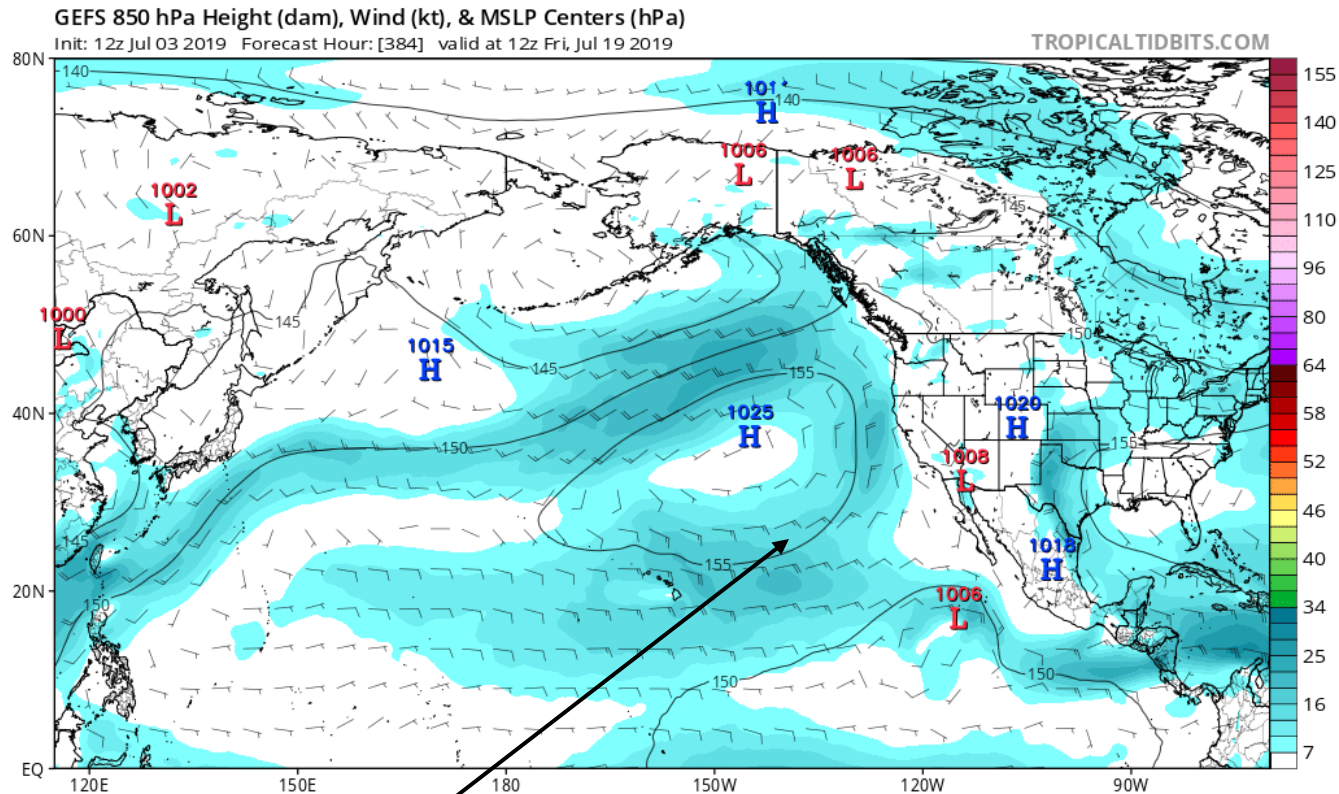
So weak eastern Pacific high pressure with weak Trade / subtropical winds during start of event

Mid-Latitude Interactions



Weak eastern Pacific high pressure, light winds favored on 10 July

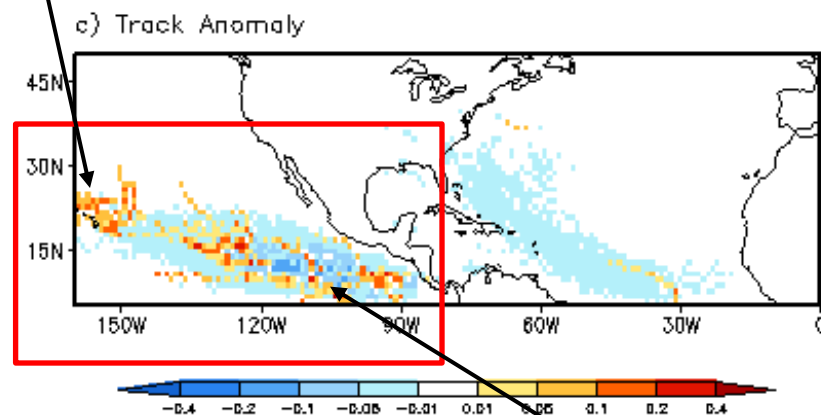
Mid-Latitude Interactions



By the second week of the event, eastern Pacific High pressure will strengthen and winds are favored to increase (snapshot as an example on 19 July). Notice likely tropical cyclone west of Mexico coast.

Barbara

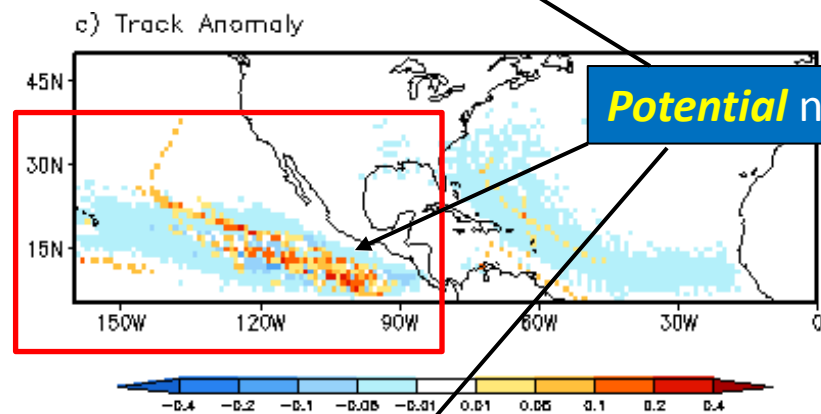
Tropical Cyclone Activity



Forecast tropical cyclone track anomalies from the CFS (red boxes)

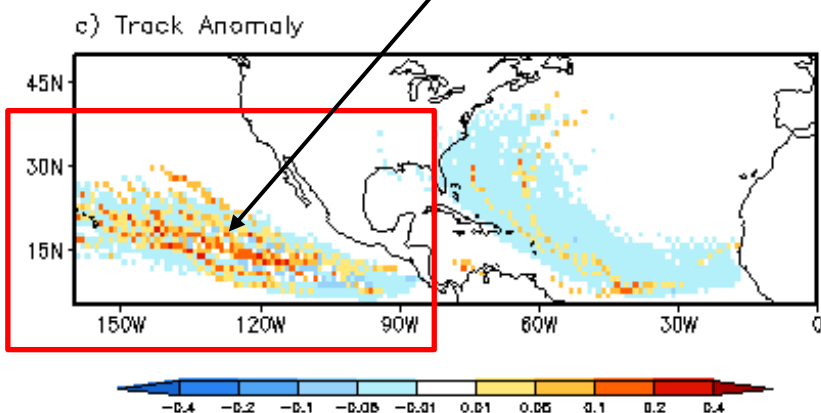
Forecast date → July 2, 2019

Dates: 7/9-7/15 (*i.e.*, Week-2)



Potential new tropical systems (red/orange)

Dates: 7/16-7/22 (*i.e.*, Week-3)



Dates: 7/23-7/29 (*i.e.*, Week-4)



OCEAN PREDICTION CENTER

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ANALYSIS & FORECAST

DATA

INFORMATION

NEWS

https://ocean.weather.gov/Pac_tab.shtml

SEARCH

The legacy OPC website URL <https://www.opc.ncep.noaa.gov> permanently redirects to <https://ocean.weather.gov>. On or after July 9, 2019 the old URL will not work. Users must use <https://ocean.weather.gov> to access the OPC website. More information is available at https://www.weather.gov/media/notification/scn19-10opc_terminate.pdf.

PLEASE NOTE: This .shtml webpage is going to be converted to .php format on July 9, 2019. On that date you will need to replace ".shtml" with ".php" in the URL address bar. The actual page content will remain the same. More information is available at https://www.weather.gov/media/notification/scn19-11opc_shtmlaaa.pdf.

Atlantic Weather

Pacific Weather

Alaska/Arctic Weather

Analysis – Graphical Forecasts – Text Forecasts – Hazards – Gridded – Other Marine

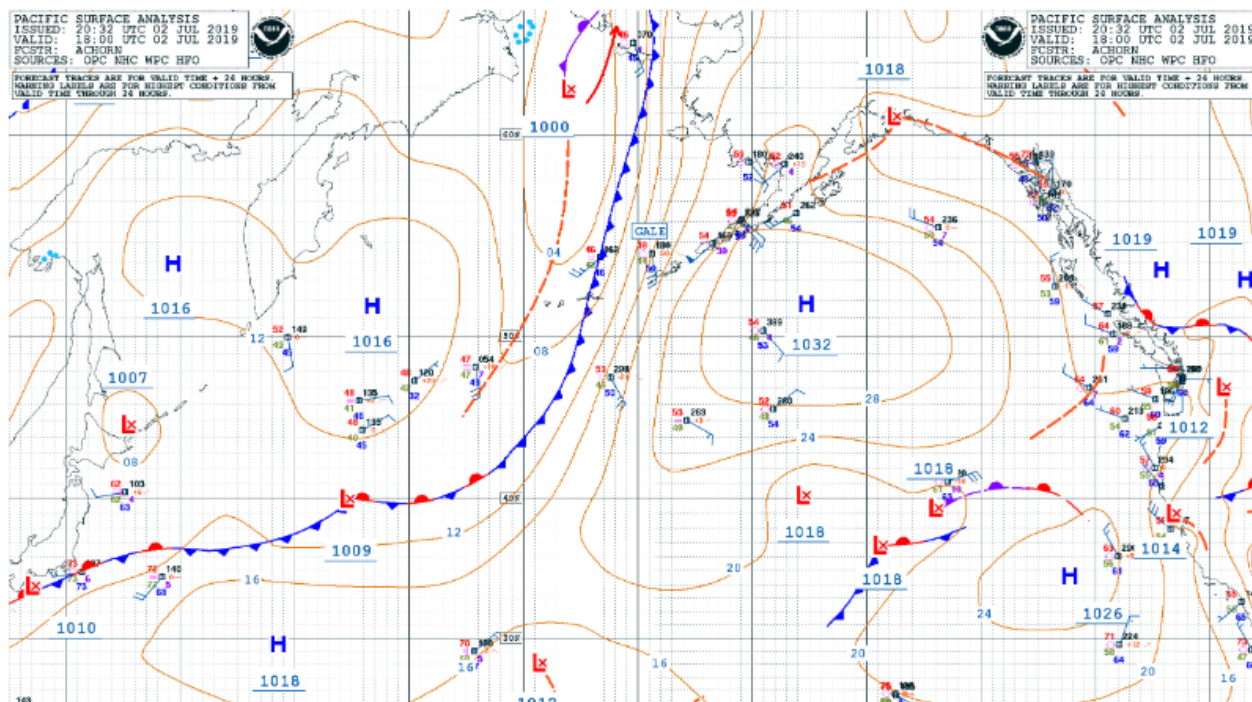
Pacific Analysis

Click on the map below and choose from:

W Pacific

Full Pacific

E Pacific



Pacific Graphical Forecasts

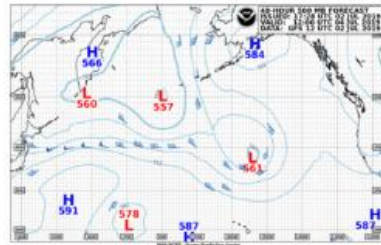


24-hour 500 mb

Loop: [3] [7] [14] Days

Updated: Tue, 02-Jul-2019 17:30:36 UTC

[More 500 MB images](#)

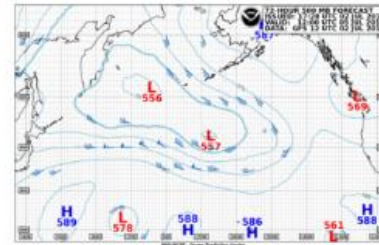


48-hour 500 mb

Loop: [3] [7] [14] Days

Updated: Tue, 02-Jul-2019 17:32:42 UTC

[More 500 MB images](#)

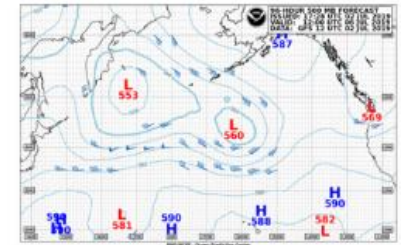


72-hour 500 mb

Loop: [3] [7] [14] Days

Updated: Tue, 02-Jul-2019 17:34:33 UTC

[More 500 MB images](#)



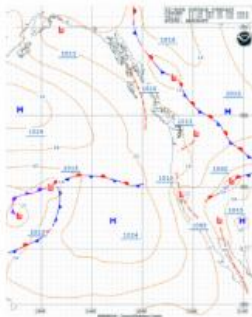
96-hour 500 mb

Loop: [3] [7] [14] Days

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[More 500 MB images](#)

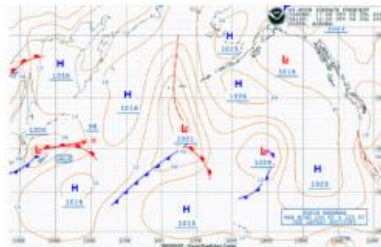
https://ocean.weather.gov/Pac_tab.shtml



24-hour surface

Loop: [3] [7] [14] Days

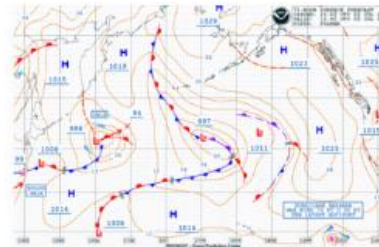
Updated: Tue, 02-Jul-2019 17:18:42 UTC



48-hour surface

Loop: [3] [7] [14] Days

Updated: Tue, 02-Jul-2019 17:09:26 UTC



72-hour surface

Loop: [3] [7] [14] Days

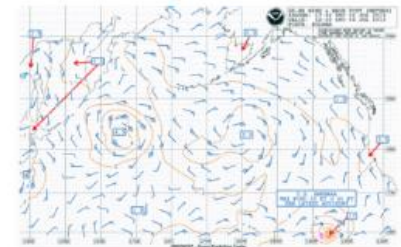
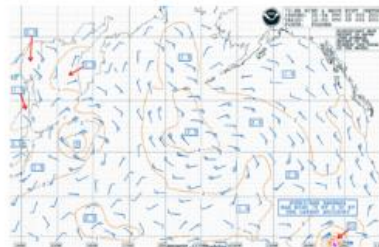
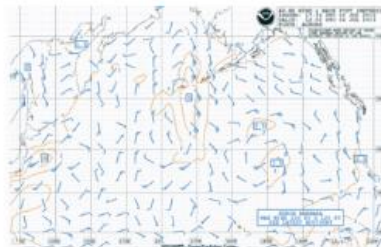
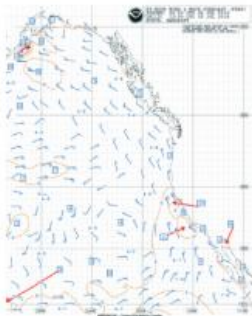
Updated: Tue, 02-Jul-2019 20:06:12 UTC

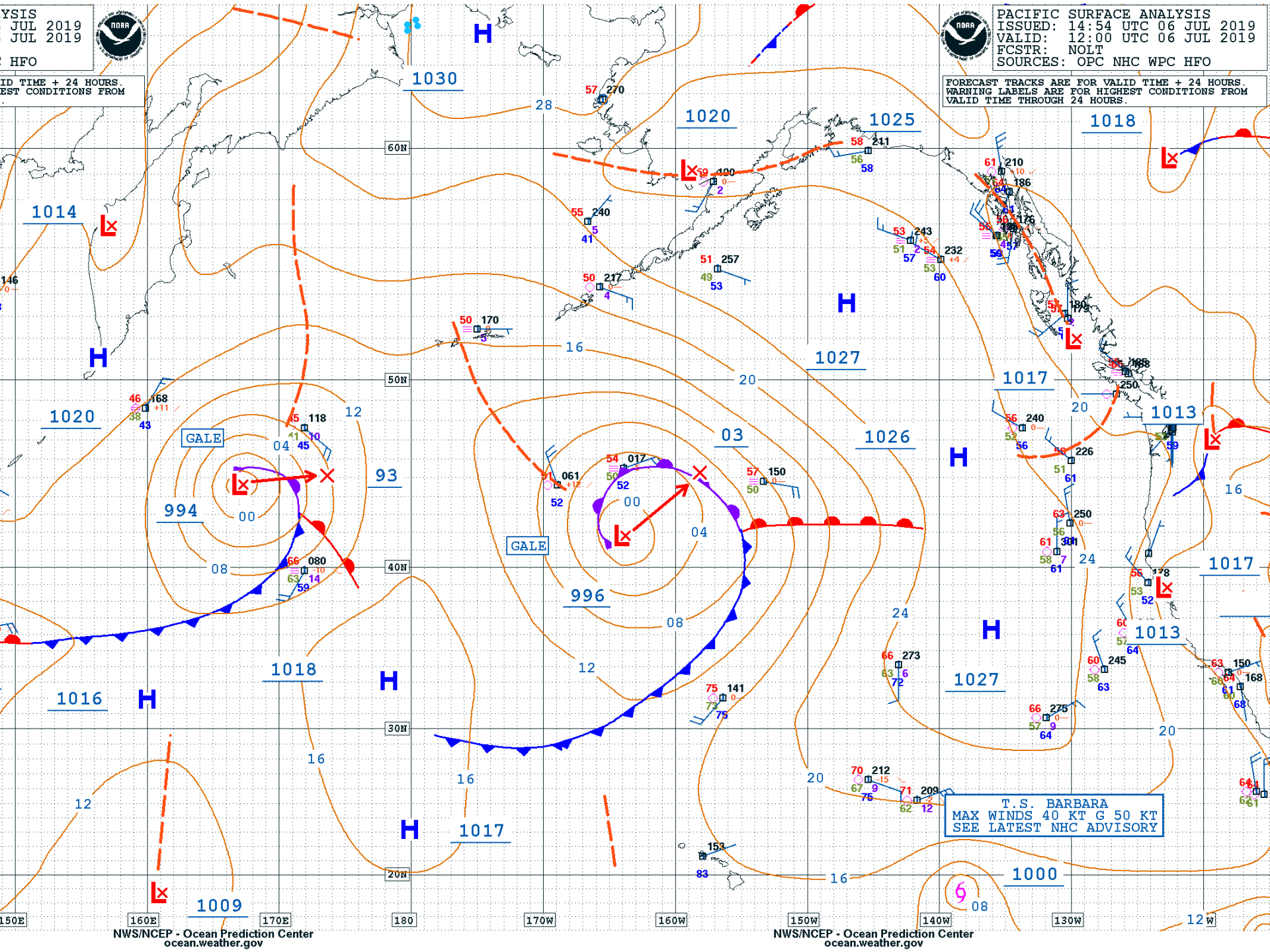
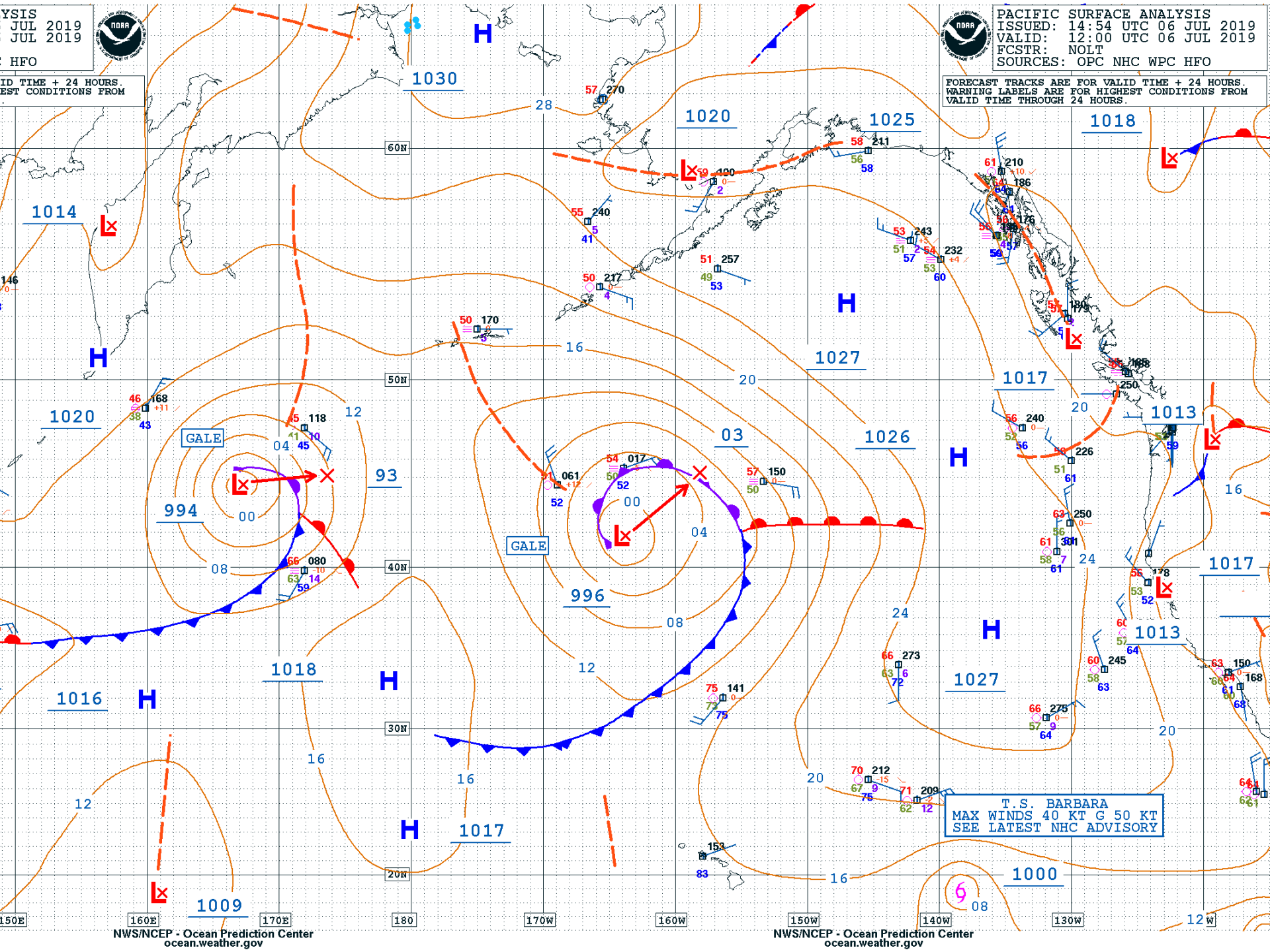


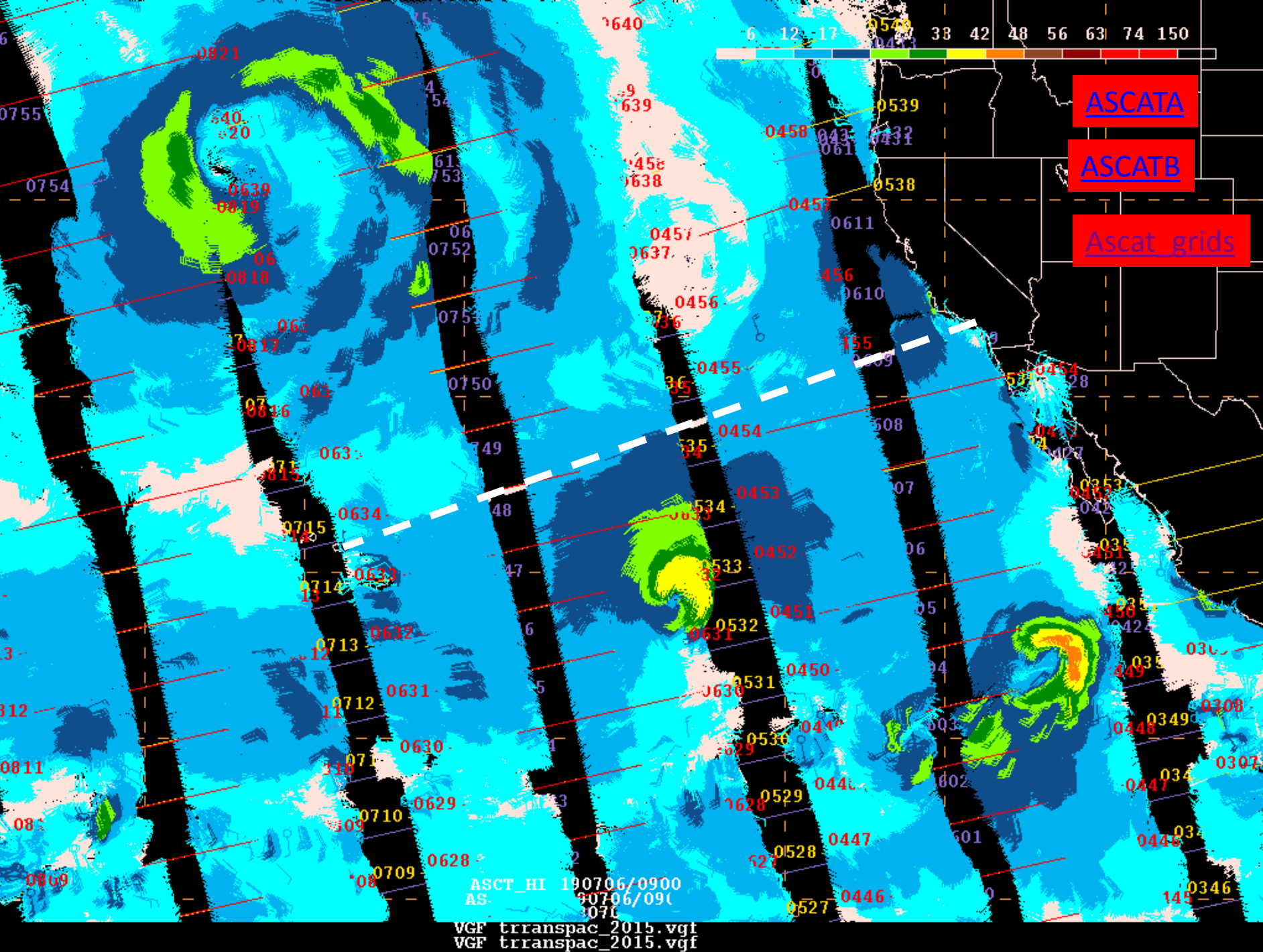
96-hour surface

Loop: [3] [7] [14] Days

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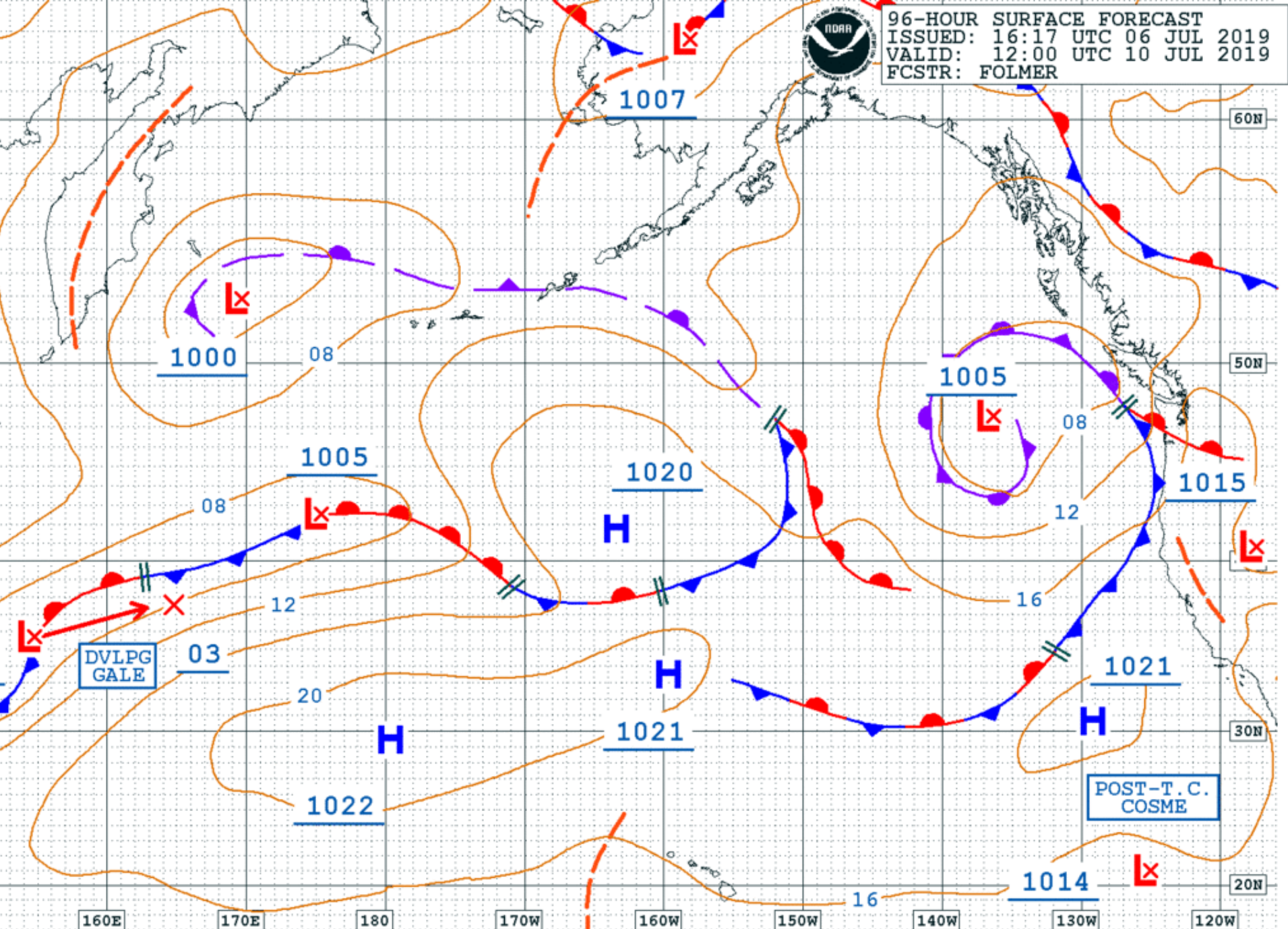








96-HOUR SURFACE FORECAST
ISSUED: 16:17 UTC 06 JUL 2019
VALID: 12:00 UTC 10 JUL 2019
FCSTR: FOLMER





Receiving information - FTPMAIL



Directions

http://www.nws.noaa.gov/tg/ftpmail_using.php

Email to: **NWS.FTPMail.OPS@noaa.gov**

Subject – any subject you like

Body of email:

open

cd fax

get ftpcmd.txt

get rfaxpac.txt

get rfaxhi.txt

get marine2.txt

quit

Example to receive instructions
and header (filenames) of
products for:

1. Instructions.
2. Pacific radiofax products
3. Hawaii radiofax
4. Hurricane bulletin

Received

tgftp.nws.noaa.gov:/marine2.txt (get marine2.txt) - NATIONAL WEATHER SERVICE MARINE TEXT PRODUCTS HL	10:22 am
tgftp.nws.noaa.gov:/rfaxhi.txt (get rfaxhi.txt) - NATIONAL WEATHER SERVICE RADIOFAX PRODUCTS for the Cen	10:22 am
tgftp.nws.noaa.gov:/rfaxpac.txt (get rfaxpac.txt) - NATIONAL WEATHER SERVICE RADIOFAX PRODUCTS for the t	10:22 am
tgftp.nws.noaa.gov:/ftpcmd.txt (get ftpcmd.txt) - ***FTPMAIL commands for ftpmail@ftpmail.nws.noaa.gov FTPMAIL	10:22 am



Receiving information - FTPMAIL



Directions

http://www.nws.noaa.gov/tg/ftpmail_using.php

Email to: **NWS.FTPMail.OPS@noaa.gov**

Subject – any subject you like

Body of email:

open

cd data

cd hurricane_products

cd eastern_pacific

cd weather

get outlook.txt

cd /data

cd hurricane_products

cd eastern_pacific

cd storm_2

get technical_advisory.txt

quit

Example to receive instructions and header (filenames) of products for:

- 1. Tropical Weather Outlook**
- 2. Tropical Cyclone Message for Barbara (storm 2)**

Received

WTPZ22 KNHC 061432
TCMEP2

POST-TROPICAL CYCLONE BARBARA FORECAST/ADVISORY NUMBER 25
NWS NATIONAL HURRICANE CENTER MIAMI FL EP022019
1500 UTC SAT JUL 06 2019

THERE ARE NO COASTAL WATCHES OR WARNINGS IN EFFECT.

POST-TROPICAL CYCLONE CENTER LOCATED NEAR 18.7N 139.2W AT 06/1500Z
POSITION ACCURATE WITHIN 25 NM

PRESENT MOVEMENT TOWARD THE WEST OR 270 DEGREES AT 15 KT

ESTIMATED MINIMUM CENTRAL PRESSURE 1000 MB
MAX SUSTAINED WINDS 35 KT WITH GUSTS TO 45 KT.
34 KT.....100NE 0SE 0SW 100NW.
12 FT SEAS..240NE 90SE 150SW 240NW.
WINDS AND SEAS VARY GREATLY IN EACH QUADRANT. RADII IN NAUTICAL MILES ARE THE LARGEST RADII EXPECTED ANYWHERE IN THAT QUADRANT.

REPEAT...CENTER LOCATED NEAR 18.7N 139.2W AT 06/1500Z
AT 06/1200Z CENTER WAS LOCATED NEAR 18.7N 138.4W

FORECAST VALID 07/0000Z 18.6N 141.5W...POST-TROP/REMNT LOW
MAX WIND 30 KT...GUSTS 40 KT.

FORECAST VALID 07/1200Z 18.4N 144.9W...POST-TROP/REMNT LOW
MAX WIND 30 KT...GUSTS 40 KT.

FORECAST VALID 08/0000Z 18.0N 148.8W...POST-TROP/REMNT LOW
MAX WIND 25 KT...GUSTS 35 KT.

FORECAST VALID 08/1200Z 18.0N 152.5W...POST-TROP/REMNT LOW
MAX WIND 20 KT...GUSTS 30 KT.



Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



<https://www.nhc.noaa.gov/?epac>

All Disturbances

Satellite Image from
4:00 am PDT Jul 5

CENTRAL
PACIFIC
OUTLOOK

BARBARA



1
(60%)

4:30 am PDT
Fri Jul 5 2019

140W 130W 120W 110W 100W 90W 80W

www.hurricanes.gov

Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



← Central Pacific

All Disturbances

35N

25N

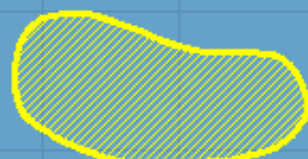
BARBARA



COSME



15N



5N

5:00 am PDT
Sat Jul 6 2019

140W

130W

120W

110W

100W

90W

80W

www.hurricanes.gov

Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Tropical Storm Barbara Forecast Advisory

[Home](#) [Public Adv](#) [Fcst Adv](#) [Discussion](#) [Wind Probs](#) [Graphics](#) [Archive](#)

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WTPZ22 KNHC 052046
TCMEP2

TCM

TROPICAL STORM BARBARA FORECAST/ADVISORY NUMBER 22
NWS NATIONAL HURRICANE CENTER MIAMI FL EP022019
2100 UTC FRI JUL 05 2019

THERE ARE NO COASTAL WATCHES OR WARNINGS IN EFFECT.

TROPICAL STORM CENTER LOCATED NEAR 18.6N 134.7W AT 05/2100Z
POSITION ACCURATE WITHIN 25 NM

PRESENT MOVEMENT TOWARD THE WEST-NORTHWEST OR 290 DEGREES AT 11 KT

ESTIMATED MINIMUM CENTRAL PRESSURE 997 MB
MAX SUSTAINED WINDS 50 KT WITH GUSTS TO 60 KT.
50 KT..... 70NE 50SE 50SW 70NW.
34 KT.....120NE 70SE 70SW 120NW.
12 FT SEAS..240NE 210SE 270SW 300NW.
WINDS AND SEAS VARY GREATLY IN EACH QUADRANT. RADII IN NAUTICAL
MILES ARE THE LARGEST RADII EXPECTED ANYWHERE IN THAT QUADRANT.

REPEAT...CENTER LOCATED NEAR 18.6N 134.7W AT 05/2100Z
AT 05/1800Z CENTER WAS LOCATED NEAR 18.5N 134.2W

FORECAST VALID 06/0600Z 18.9N 136.8W...POST-TROPICAL
MAX WIND 35 KT...GUSTS 45 KT.
34 KT... 90NE 60SE 60SW 90NW.

FORECAST VALID 06/1800Z 19.0N 139.7W...POST-TROP/REMNT LOW
MAX WIND 25 KT...GUSTS 35 KT.

FORECAST VALID 07/0600Z 18.8N 142.9W...POST-TROP/REMNT LOW
MAX WIND 20 KT...GUSTS 30 KT.

FORECAST VALID 07/1800Z 18.8N 146.4W...POST-TROP/REMNT LOW
MAX WIND 20 KT...GUSTS 30 KT.

FORECAST VALID 08/1800Z...DISSIPATED

REQUEST FOR 3 HOURLY SHIP REPORTS WITHIN 300 MILES OF 18.6N 134.7W

NEXT ADVISORY AT 06/0300Z

\$\$
FORECASTER PASCH

Tropical Storm Barbara Forecast Discussion

[Home](#) [Public Adv](#) [Fcst Adv](#) [Discussion](#) [Wind Probs](#) [Graphics](#) [Archive](#)

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WTPZ42 KNHC 052047
TCDEP2

TCD

Tropical Storm Barbara Discussion Number 22
NWS National Hurricane Center Miami FL EP022019
1100 AM HST Fri Jul 05 2019

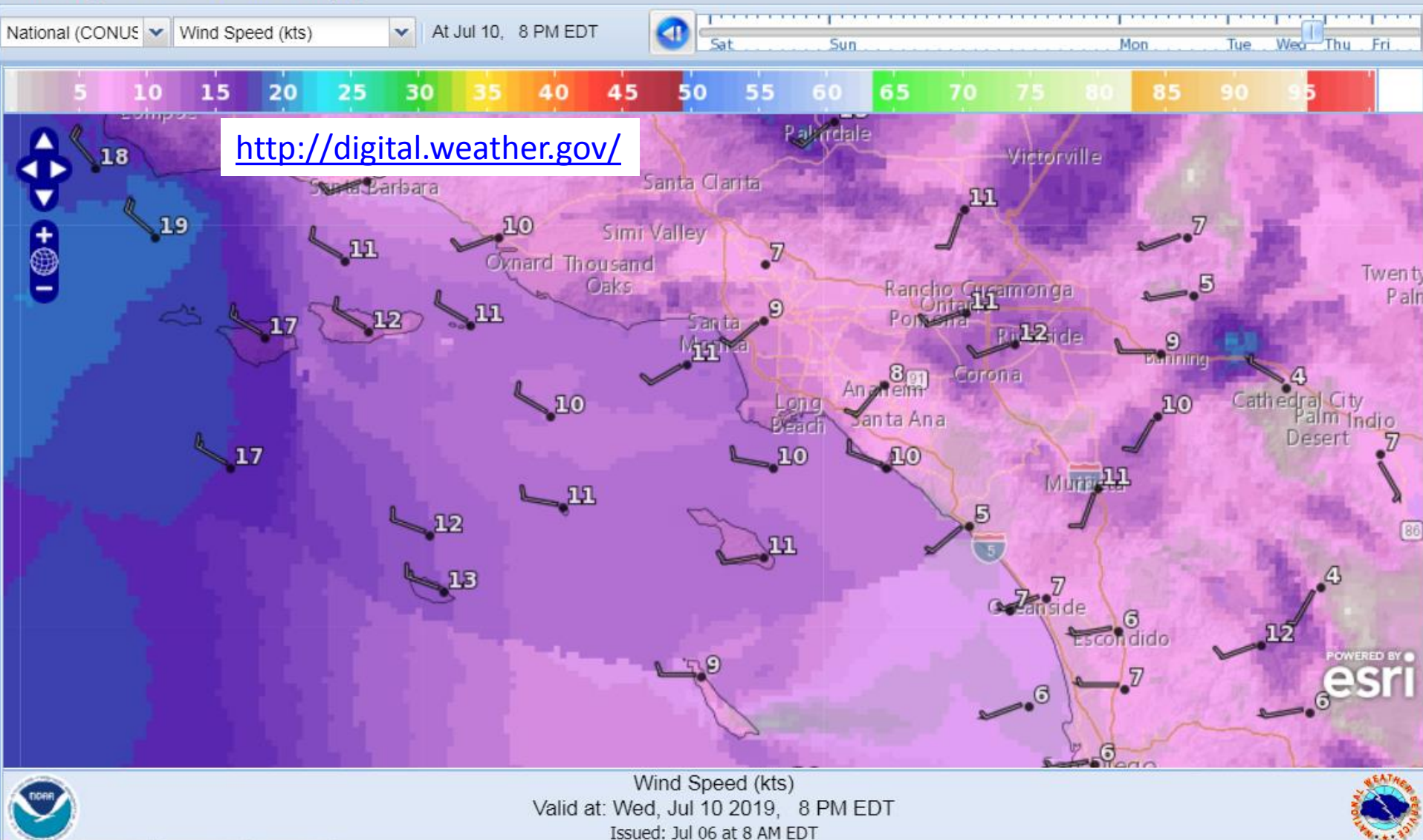
Increasingly strong vertical shear has stripped away the deep convection from the system. A recent ASCAT overpass indicates that the cyclone's intensity is around 50 kt. Although Barbara will not be moving over much cooler waters during the next couple of days, the shear is forecast to increase to more than 30 kt with an accompanying decrease in mid-level moisture. These hostile environmental factors will likely cause continued weakening, and the system should degenerate into a post-tropical cyclone by tomorrow. The NHC intensity forecast is close to the latest corrected model consensus, HCCA.

Barbara is turning toward the left and the initial motion estimate is now west-northwestward, or 290/11 kt. There is basically no change to the track forecast reasoning. A low- to mid-level ridge to the north of the cyclone should induce a turn toward the west with some acceleration. The official track forecast is, again, very similar to the dynamical model consensus solution.

FORECAST POSITIONS AND MAX WINDS

INIT	05/2100Z	18.6N 134.7W	50 KT	60 MPH
12H	06/0600Z	18.9N 136.8W	35 KT	40 MPH...POST-TROPICAL
24H	06/1800Z	19.0N 139.7W	25 KT	30 MPH...POST-TROP/REMNT LOW
36H	07/0600Z	18.8N 142.9W	20 KT	25 MPH...POST-TROP/REMNT LOW
48H	07/1800Z	18.8N 146.4W	20 KT	25 MPH...POST-TROP/REMNT LOW
72H	08/1800Z	...	DISSIPATED	

\$\$
Forecaster Pasch



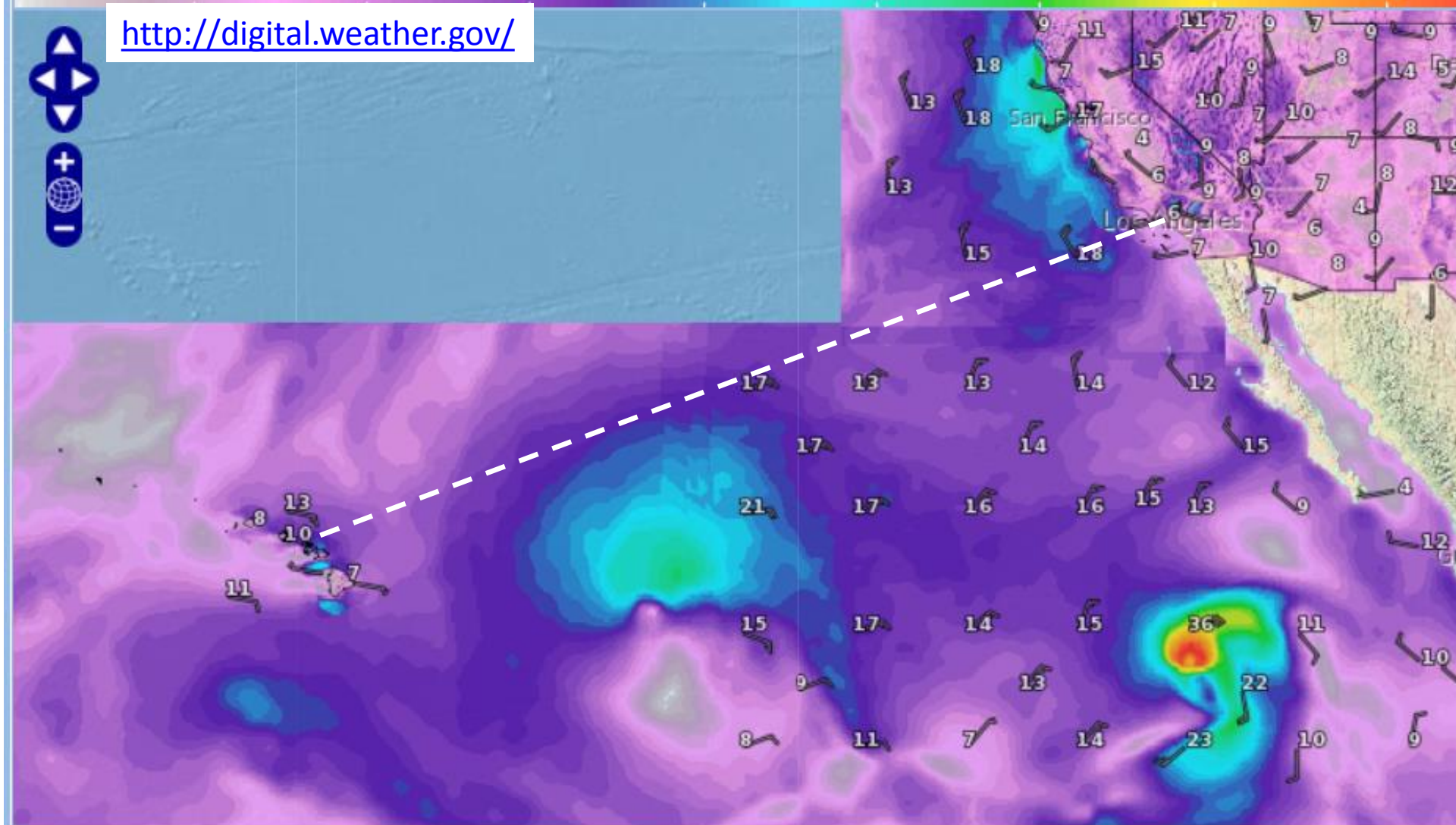
NDFD – NOAA/NWS forecaster based gridded (GRIB) winds
- available from saildocs

Oceanic Wind Speed (kts) At Jul 6, 8 PM EDT

Sat Sun Mon

5 10 15 20 25 30 35 40

<http://digital.weather.gov/>

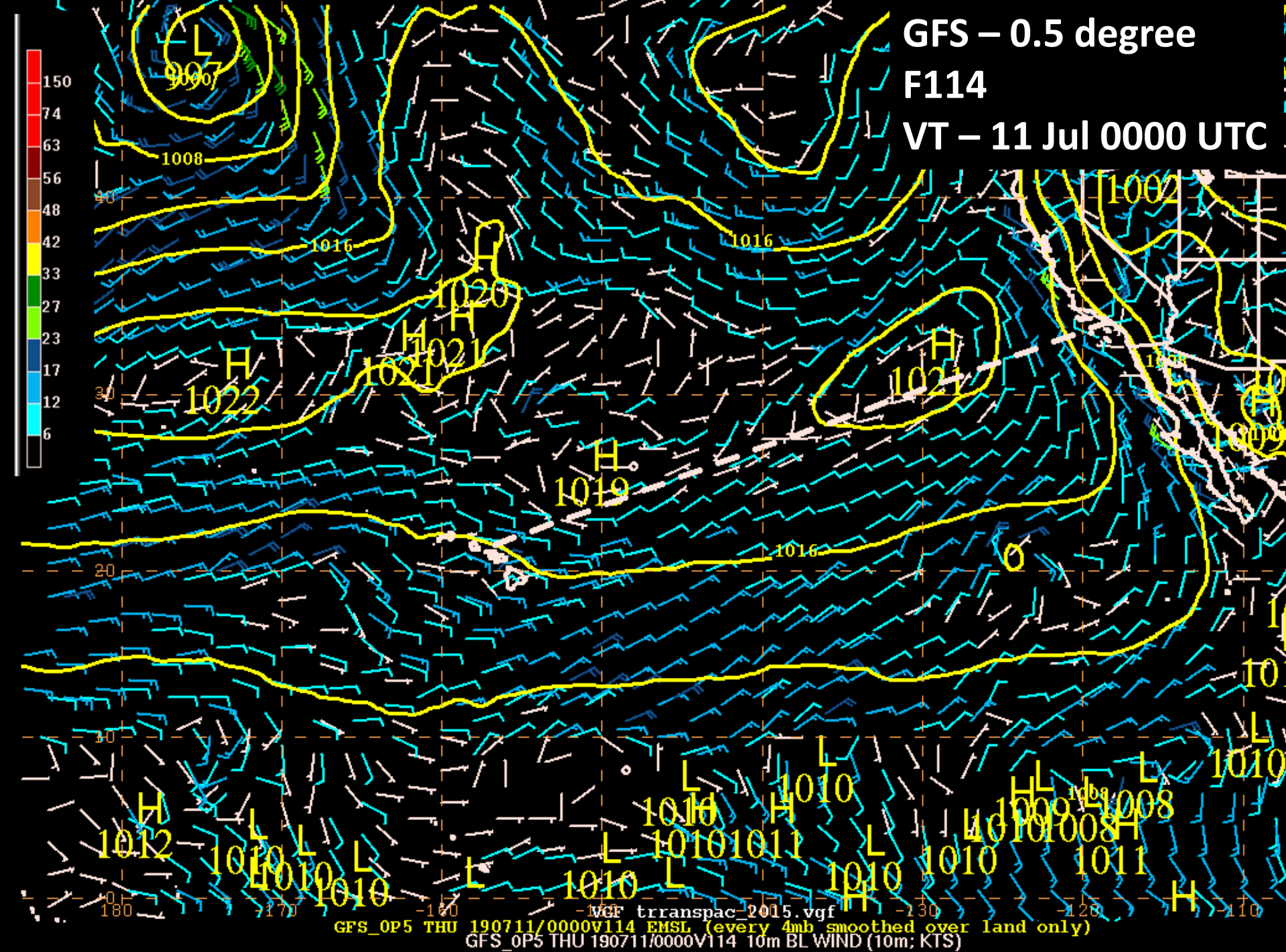


Wind Speed (kts)

Valid at: Sat, Jul 6 2019, 8 PM EDT

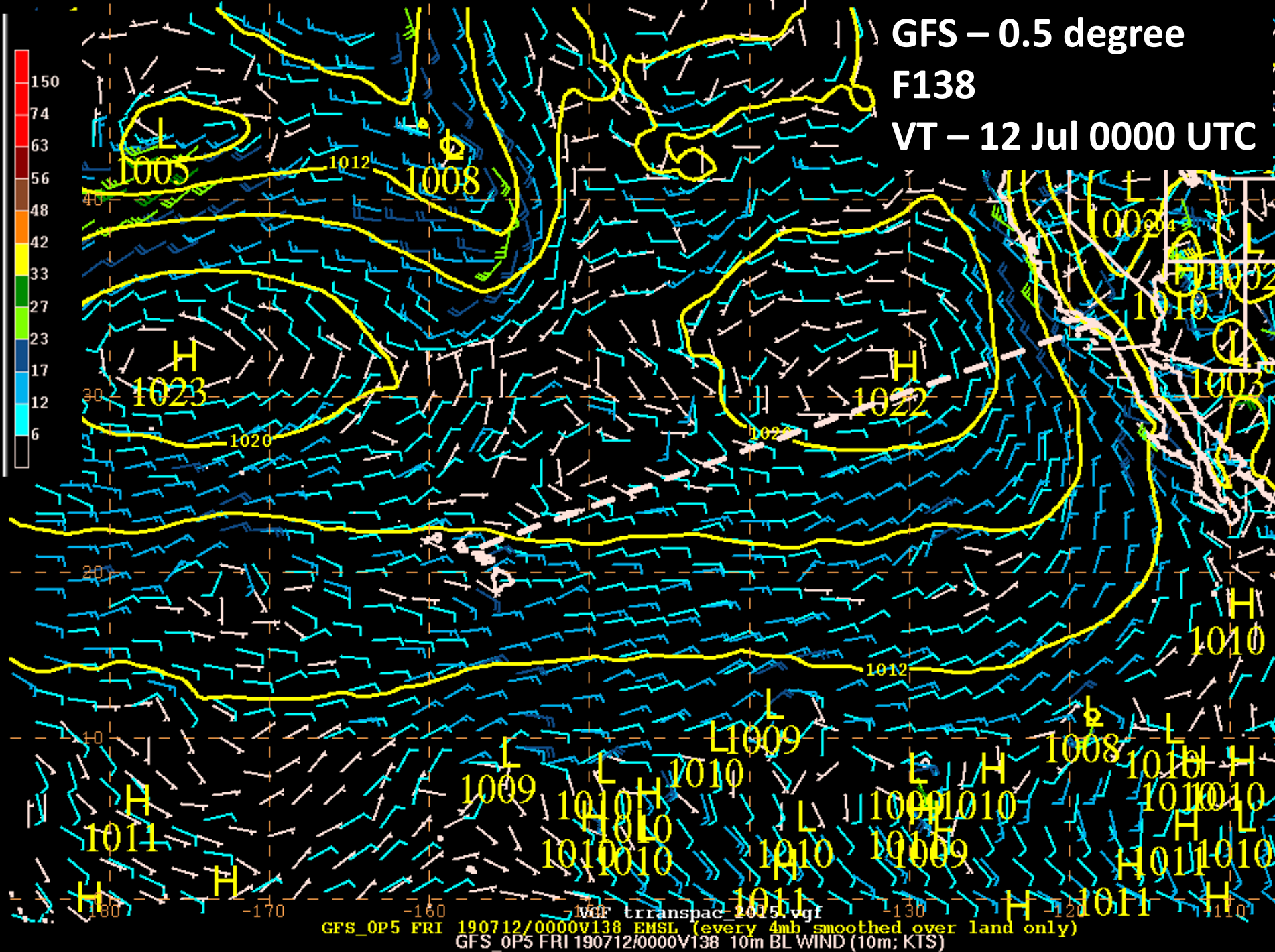
Issued: Jul 06 at 12 PM EDT

VT – 11 Jul 0000 UTC



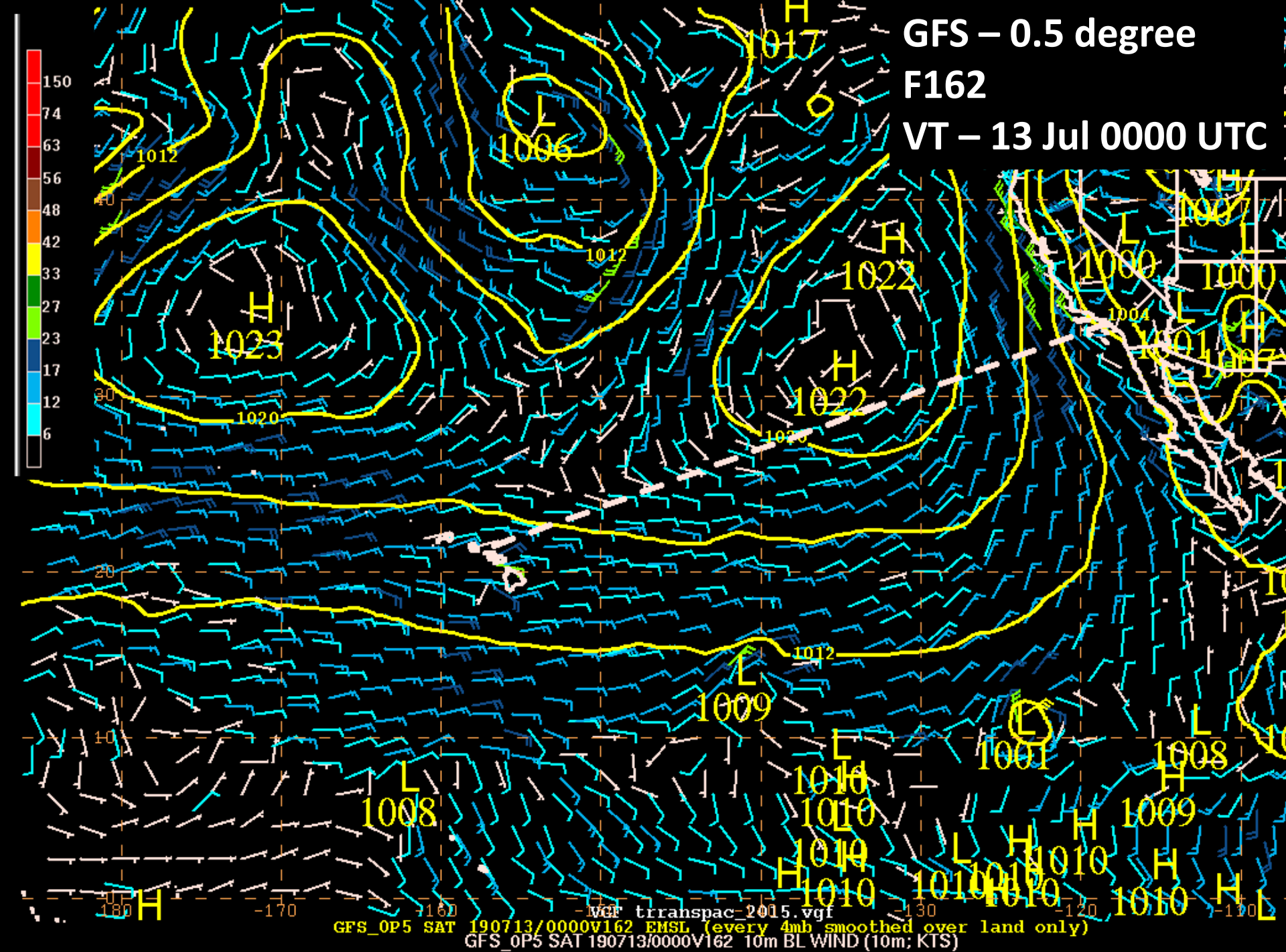
GFS_OP5 THU 190711/0000V114 EMSL (every 4mb smoothed over land only)
GFS_OP5 THU 190711/0000V114 10m BL WIND (10m; KTS)

VT – 12 Jul 0000 UTC

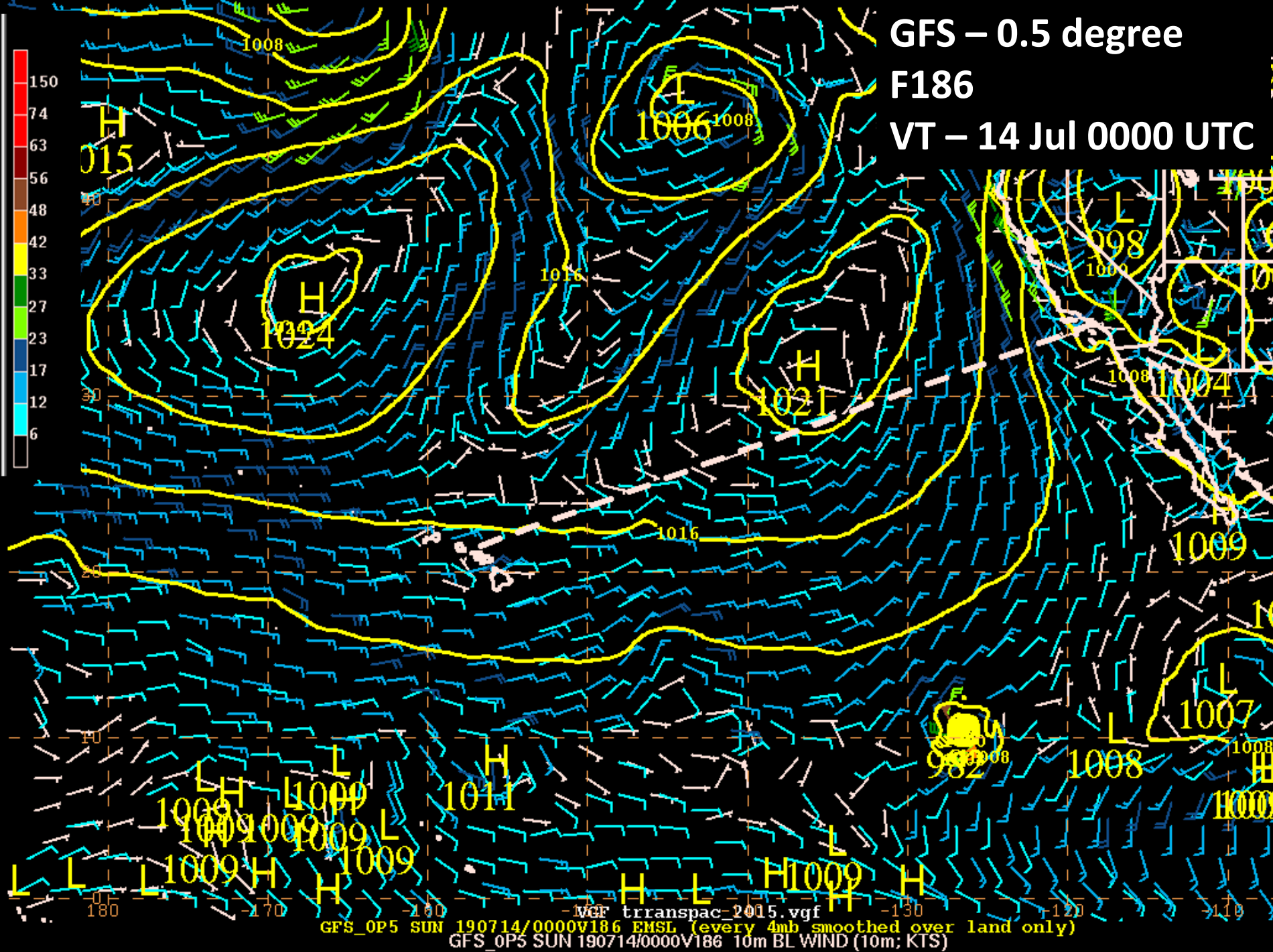


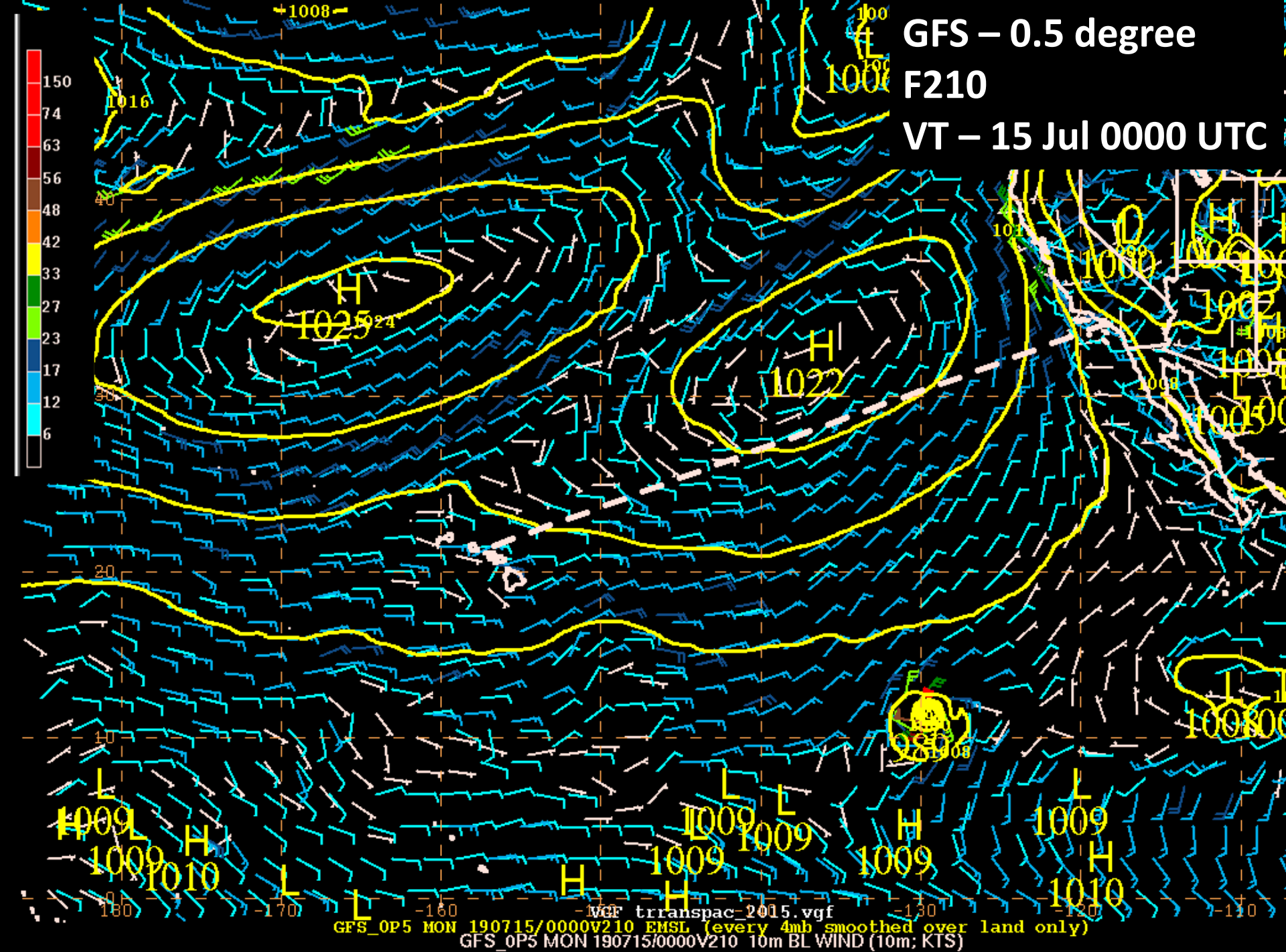
GFS_OP5 FRI 190712/0000V138 EMSL (every 4mb smoothed over land only)
GFS_OP5 FRI 190712/0000V138 10m BL WIND (10m; KTS)

VT – 13 Jul 0000 UTC



VT - 14 Jul 0000 UTC

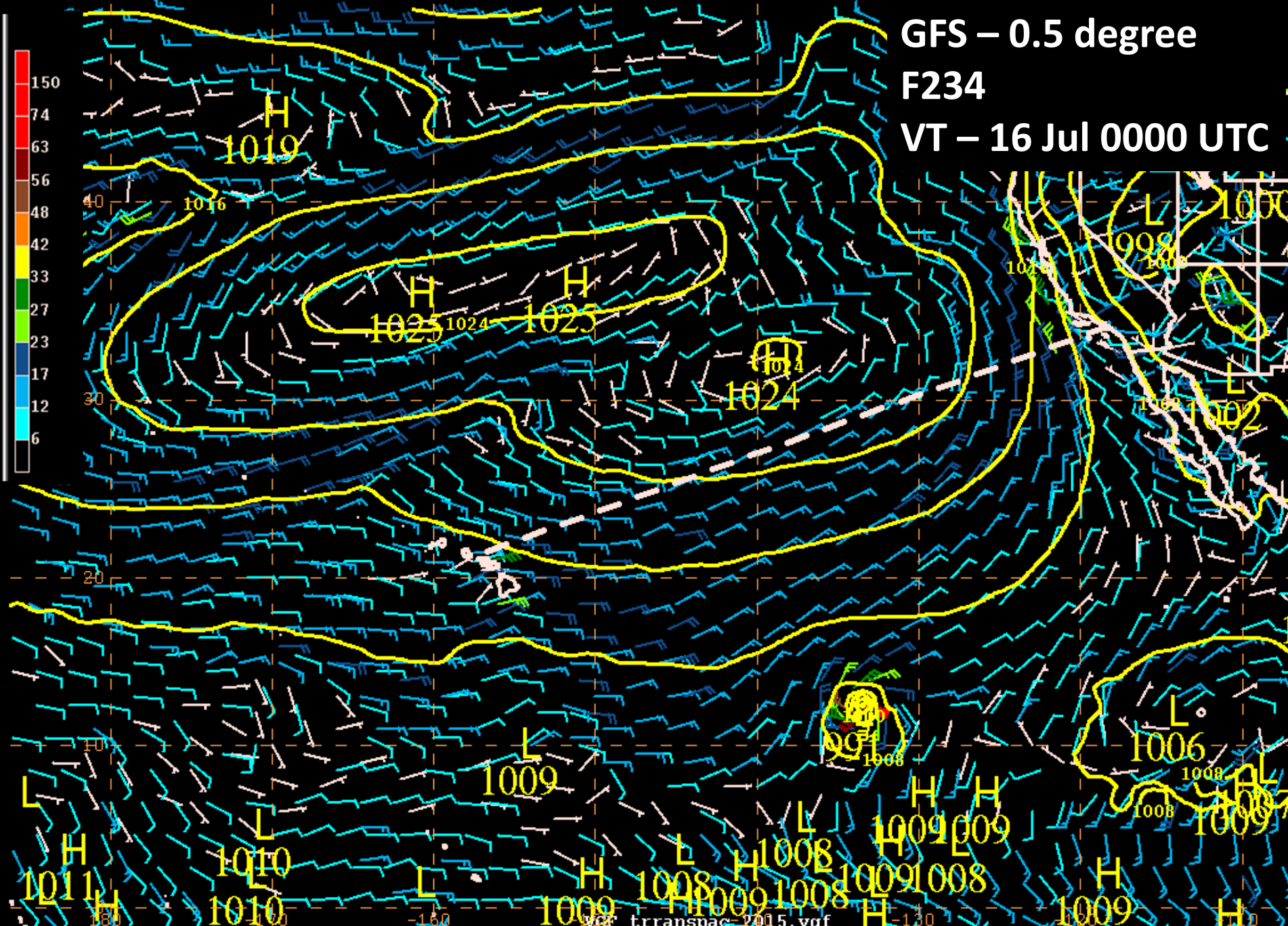


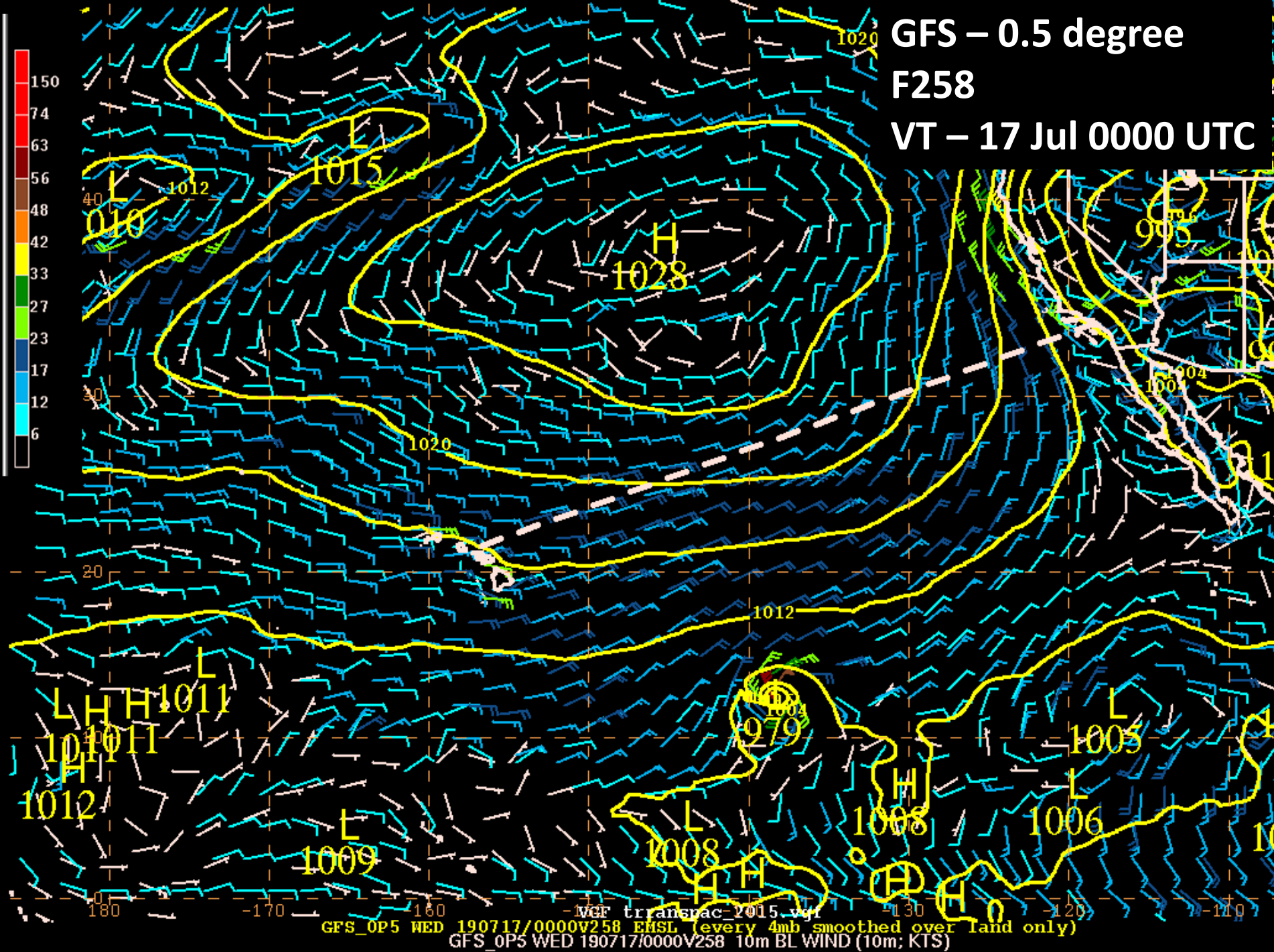


GFS – 0.5 degree

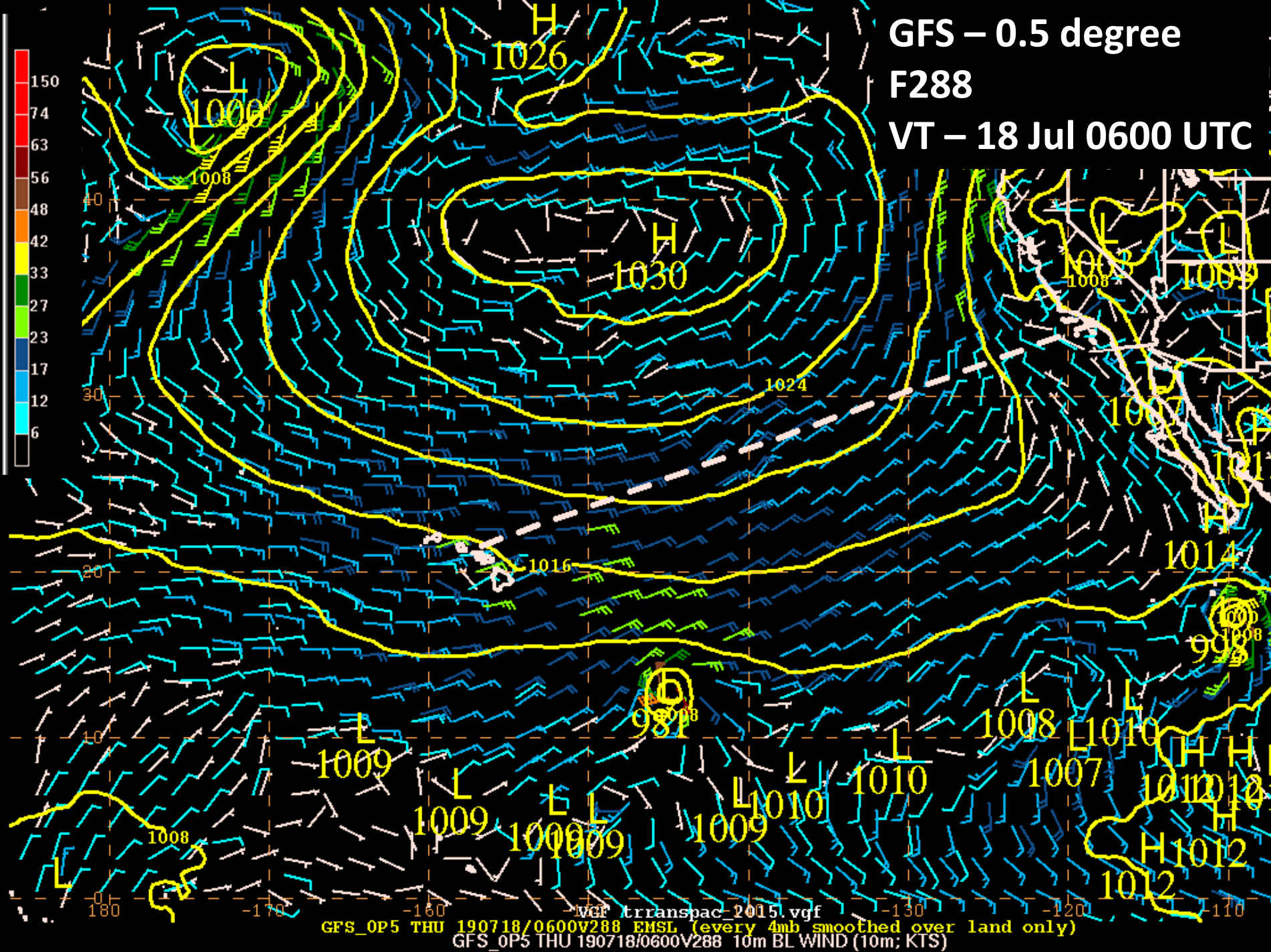
F234

VT – 16 Jul 0000 UTC



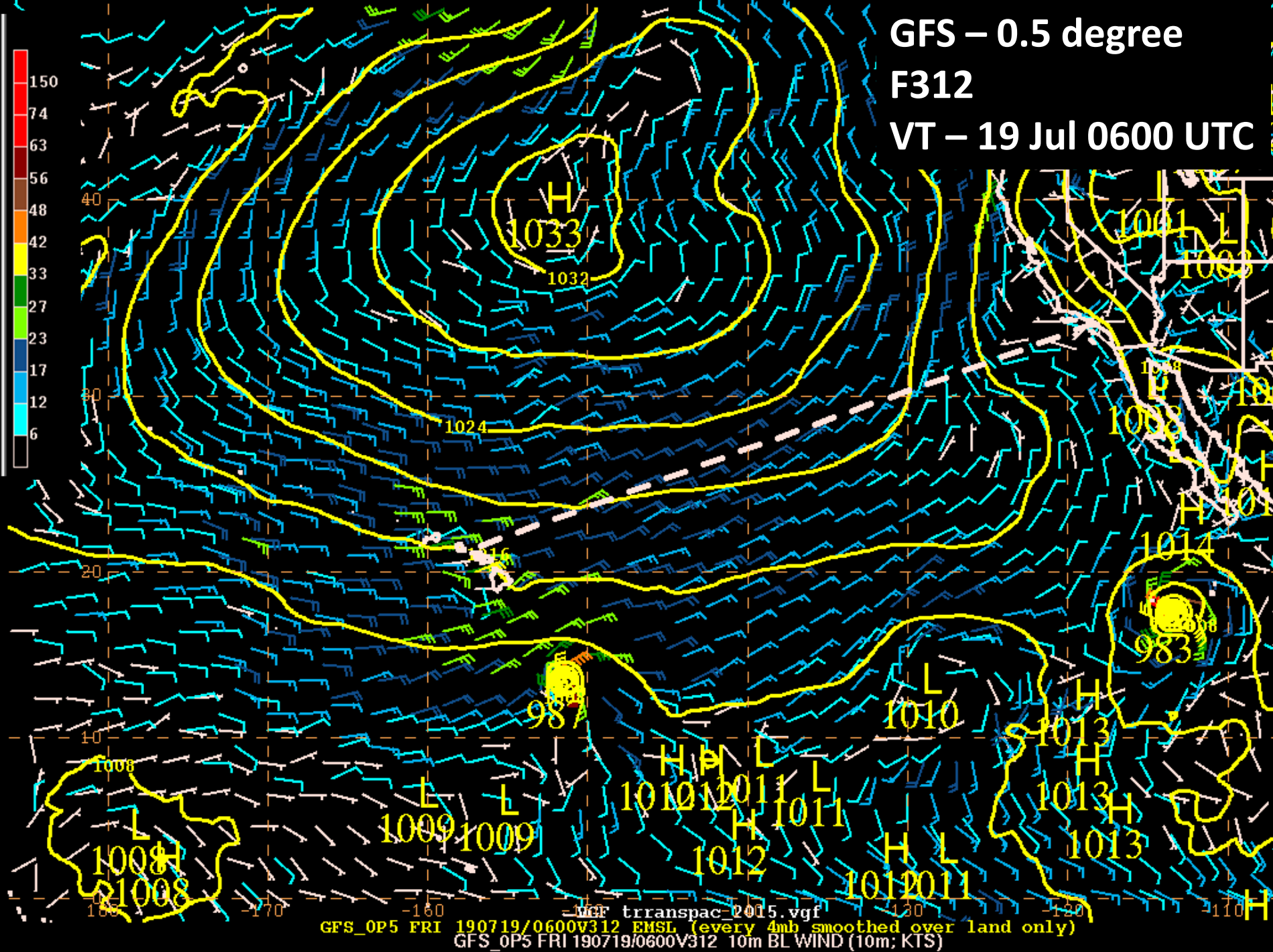


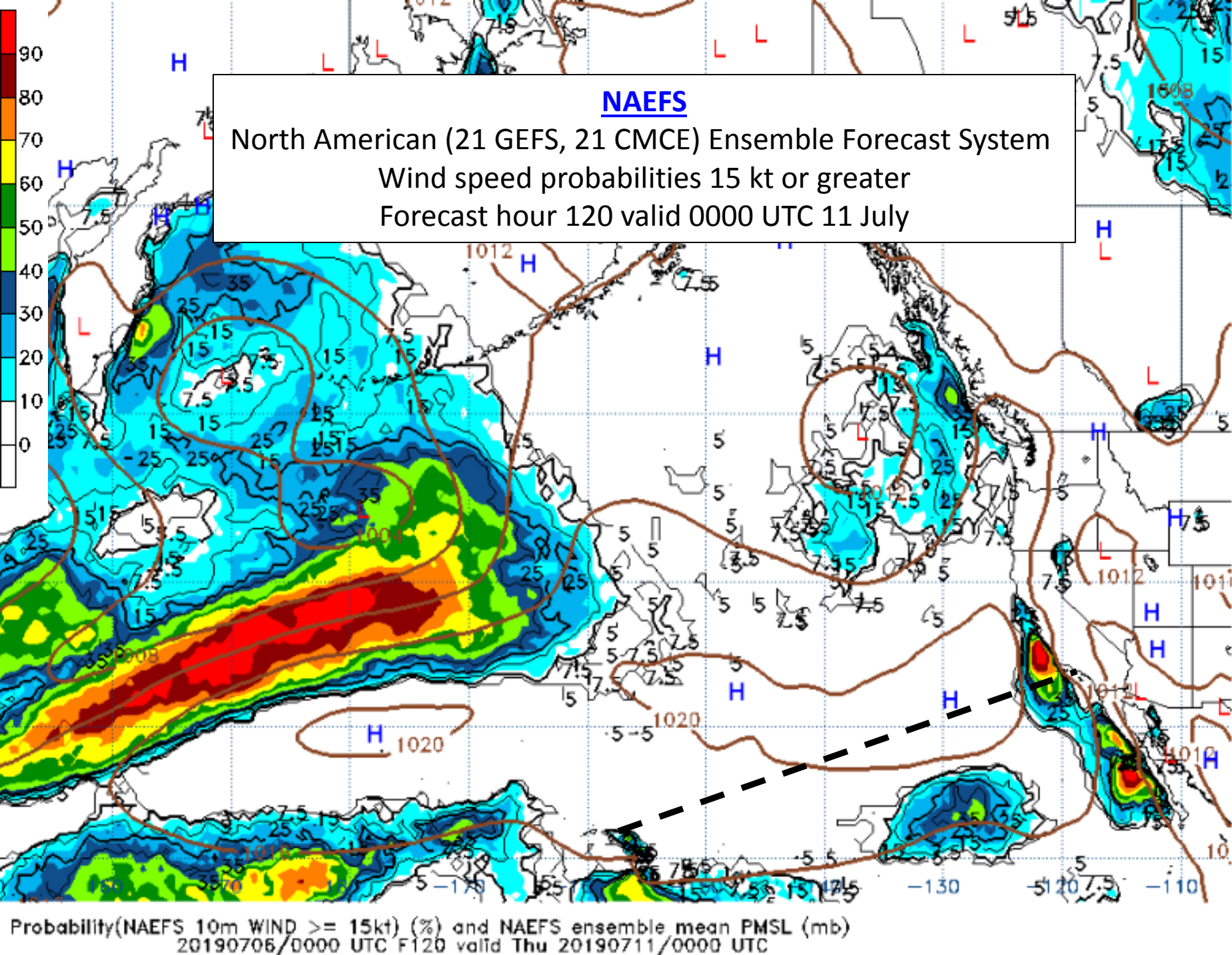
GFS – 0.5 degree
F288
VT – 18 Jul 0600 UTC

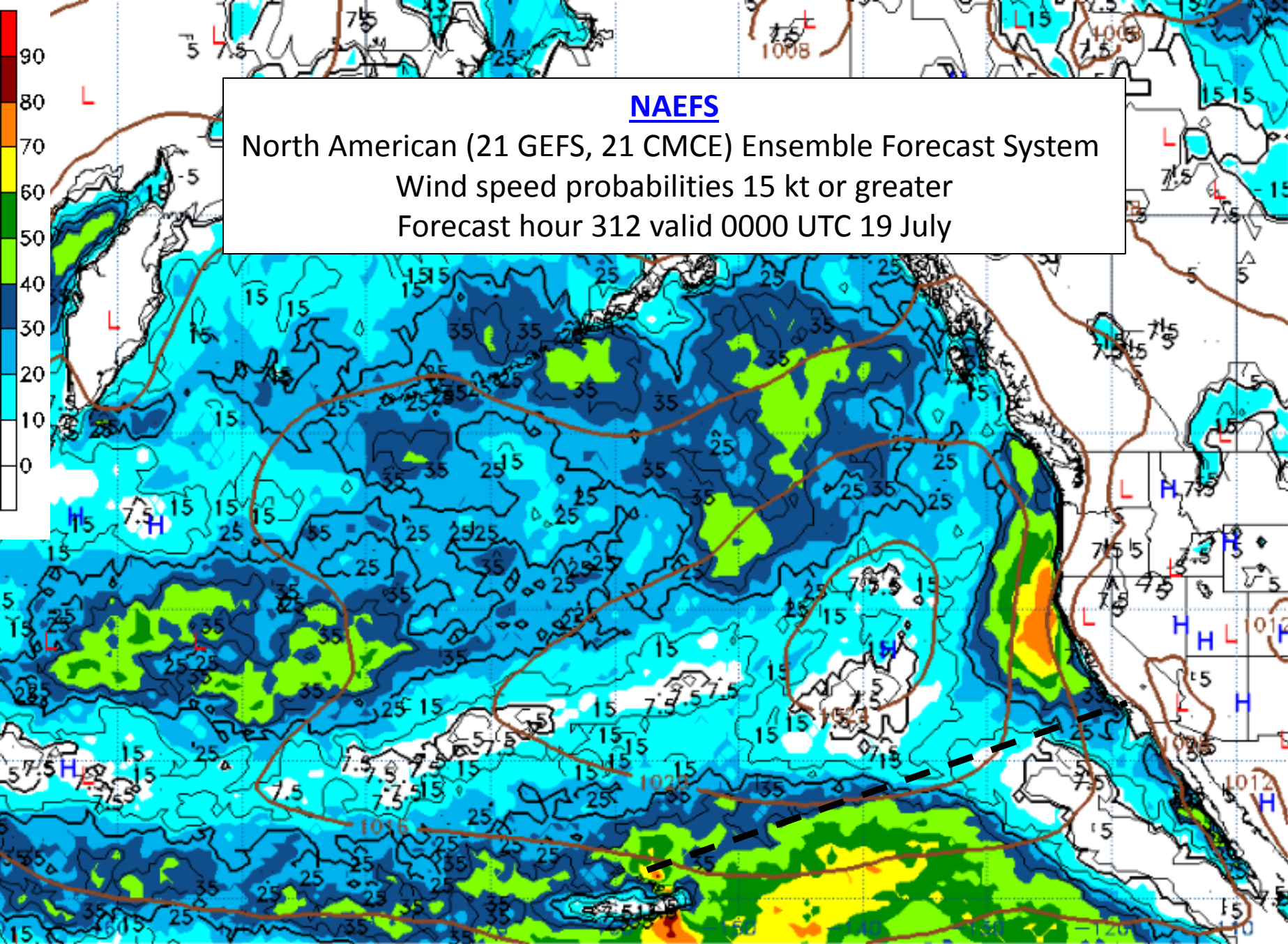


GFS_OP5 THU 190718/0600V288 EMSL (every 4mb smoothed over land only)
GFS_OP5 THU 190718/0600V288 10m BL WIND (10m; KTS)

VT – 19 Jul 0600 UTC







NAEFS

North American (21 GEFS, 21 CMCE) Ensemble Forecast System

Wind speed probabilities 15 kt or greater

Forecast hour 312 valid 0000 UTC 19 July

Probability(NAEFS 10m WIND \geq 15kt) (%) and NAEFS ensemble mean PMSL (mb)
20190706/0000 UTC F312 valid Fri 20190719/0000 UTC



Summary



- Balance the information you use – routing tools,
 - and authoritative information - NOAA
 - Update frequently
- Recommend you are familiar with products such as:
 - Tropical Weather Outlook (TWO)
 - Tropical Cyclone Messages (TCM), schedule/ how to receive
 - National Hurricane Center (east of 140 W)
 - eastern_pacific
 - Central Pacific Hurricane Center (west of 140W)
 - central_pacific
- Climate scale – ENSO is weakening and minimal
 - Madden Julian Oscillation is active throughout
 - Trades weak 1st week, more normal 2nd week
 - Tropical Cyclone activity likely for much of the race period

Have a safe race!

